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FILE 'REGISTRY' ENTERED AT 09:34:40 ON 24 SEP 2008
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STRUCTURE FILE UPDATES: 22 SEP 2008 HIGHEST RN 1051655-89-0
DICTIONARY FILE UPDATES: 22 SEP 2008 HIGHEST RN 1051655-89-0

New CAS Information Use Policies, enter HELP USAGETERMS for details.

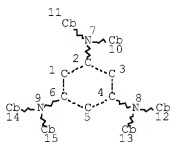
TSCA INFORMATION NOW CURRENT THROUGH July 5, 2008.

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REGISTRY includes numerically searchable data for experimental and
predicted properties as well as tags indicating availability of
experimental property data in the original document. For information
on property searching in REGISTRY, refer to:

<http://www.cas.org/support/stngen/stdoc/properties.html>

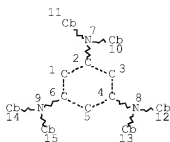
=> d que stat 124
L13 STR



NODE ATTRIBUTES:
DEFAULT MLEVEL IS ATOM
GGCAT IS UNS AT 10
GGCAT IS UNS AT 11
GGCAT IS UNS AT 12
GGCAT IS UNS AT 13
GGCAT IS UNS AT 14
GGCAT IS UNS AT 15
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS 15

STEREO ATTRIBUTES: NONE
L14 375 SEA FILE=REGISTRY SSS FUL L13
L15 STR



NODE ATTRIBUTES:

DEFAULT MLEVEL IS ATOM

GGCAT IS UNS AT 10

GGCAT IS UNS AT 11

GGCAT IS UNS AT 12

GGCAT IS UNS AT 13

GGCAT IS UNS AT 14

GGCAT IS UNS AT 15

DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:

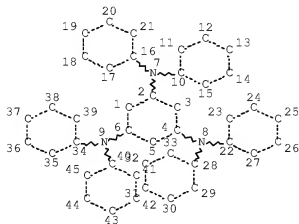
RING(S) ARE ISOLATED OR EMBEDDED

NUMBER OF NODES IS 15

STEREO ATTRIBUTES: NONE

L16 (375)SEA FILE=REGISTRY SSS FUL L15

L17 STR



NODE ATTRIBUTES:

DEFAULT MLEVEL IS ATOM

DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:

RSPEC 45 34 6 16 10 28 22

NUMBER OF NODES IS 45

STEREO ATTRIBUTES: NONE

L18 185 SEA FILE=REGISTRY SUB=L16 SSS FUL L17

L19 84 SEA FILE=REGISTRY ABB=ON PLU=ON L18 AND NR=7

L20 55 SEA FILE=REGISTRY ABB=ON PLU=ON L19 NOT O/ELS

L22 6 SEA FILE=REGISTRY ABB=ON PLU=ON (104216-55-9/BI OR
138143-23-4/BI OR 147-14-8/BI OR 185690-41-9/BI OR
2085-33-8/BI OR 852641-11-3/BI)
L23 2 SEA FILE=REGISTRY ABB=ON PLU=ON L22 AND L14
L24 54 SEA FILE=REGISTRY ABB=ON PLU=ON L20 NOT L23

=> d his

(FILE 'HOME' ENTERED AT 08:57:51 ON 24 SEP 2008)

FILE 'HCAPLUS' ENTERED AT 08:58:10 ON 24 SEP 2008
ACT GAR054AN/A

L1 (6)SEA FILE=REGISTRY ABB=ON PLU=ON (104216-55-9/BI OR 1381
L2 STR
L3 (375)SEA FILE=REGISTRY SSS FUL L2
L4 STR
L5 (185)SEA FILE=REGISTRY SUB=L3 SSS FUL L4
L6 (180)SEA FILE=REGISTRY ABB=ON PLU=ON L5 NOT M/ELS
L7 (164)SEA FILE=REGISTRY ABB=ON PLU=ON L6 AND NC=1
L8 (2)SEA FILE=REGISTRY ABB=ON PLU=ON L1 AND L7
L9 (148)SEA FILE=HCAPLUS ABB=ON PLU=ON L7
L10 (20)SEA FILE=HCAPLUS ABB=ON PLU=ON L8
L11 128 SEA FILE=HCAPLUS ABB=ON PLU=ON L9 NOT L10

L12 115 S L11 AND (PY<=2005 OR PRY<=2005 OR AY<=2005)

FILE 'REGISTRY' ENTERED AT 09:01:45 ON 24 SEP 2008
ACT GAR052A/A

L13 STR
L14 375 SEA FILE=REGISTRY SSS FUL L13

ACT GAR052S1/A

L15 STR
L16 (375)SEA FILE=REGISTRY SSS FUL L15
L17 STR
L18 185 SEA FILE=REGISTRY SUB=L16 SSS FUL L17

L19 84 S L18 AND NR=7

FILE 'STNGUIDE' ENTERED AT 09:20:03 ON 24 SEP 2008

FILE 'STNGUIDE' ENTERED AT 09:28:37 ON 24 SEP 2008

FILE 'REGISTRY' ENTERED AT 09:29:32 ON 24 SEP 2008
L20 55 S L19 NOT O/ELS

FILE 'HCAPLUS' ENTERED AT 09:30:17 ON 24 SEP 2008
E US20070066848/PN
L21 1 S E3
SEL RN

FILE 'REGISTRY' ENTERED AT 09:30:55 ON 24 SEP 2008
L22 6 S E1-6
L23 2 S L22 AND L14
L24 54 S L20 NOT L23

FILE 'HCAPLUS' ENTERED AT 09:31:26 ON 24 SEP 2008

L25 66 S L24
L26 64 S L25 AND (PY<=2005 OR PRY<=2005 OR AY<=2005)
L27 20 S L23
L28 55 S L26 NOT L27

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FILE 'HCAPLUS' ENTERED AT 09:34:48 ON 24 SEP 2008

USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.

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FILE COVERS 1907 - 24 Sep 2008 VOL 149 ISS 13

FILE LAST UPDATED: 23 Sep 2008 (20080923/ED)

HCAplus now includes complete International Patent Classification (IPC) reclassification data for the second quarter of 2008.

New CAS Information Use Policies, enter HELP USAGETERMS for details.

This file contains CAS Registry Numbers for easy and accurate substance identification.

=> d ibib abs hitstr hitind l28 1-55

L28 ANSWER 1 OF 55 HCAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2006:1357148 HCAPLUS Full-text

DOCUMENT NUMBER: 146:110888

TITLE: Light-emitting devices with anthracene derivative-metal oxide composite layers and electronic appliances using the same

INVENTOR(S): Iwaki, Yuji; Seo, Satoshi; Kawakami, Takahiro;

Ikeda, Hisao; Sakata, Junichiro; Aoyama, Tomoya

Semiconductor Energy Laboratory Co., Ltd., Japan

SOURCE: U.S. Pat. Appl. Publ., 80 pp.

CODEN: USXXCO

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 20060292394	A1	20061228	US 2006-452979	200606

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JP 2008021665	A	20080131	JP 2006-171076	
				200606
				21
CN 1885585	A	20061227	CN 2006-10094005	
				200606
				22
KR 2006134849	A	20061228	KR 2006-56385	
				200606
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PRIORITY APPLN. INFO.:			<--	
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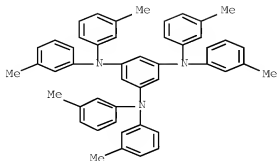
AB Light-emitting devices comprising a first electrode; a second electrode; and a light-emitting layer formed between the electrodes are described which are provided with a mixed layer, formed between the first electrode and the light-emitting layer, comprising an anthracene derivative and a metal oxide showing an electron accepting property with respect to the anthracene derivative. Light-emitting devices are also described which comprise a first electrode; a second electrode; n ($n \geq 2$) light-emitting layers formed between the first electrode and the second electrode; and a first mixed layer formed between an m -th light-emitting layer ($1 \leq m \leq n-1$) and an $(m+1)$ -th light-emitting layer; and a second mixed layer formed between the m -th light emitting layer and the $(m+1)$ -th light emitting layer, the first mixed layer being closer to the first electrode than the second electrode and containing a substance having an electron transporting property or a bipolar substance and a substance selected from alkaline earth metals, alkali metal oxides, alkaline earth metal oxides, alkali metal fluorides, and alkaline earth metal fluorides and the second mixed layer contains an anthracene derivative and a metal oxide showing an electron accepting property with respect to the anthracene derivative. The light-emitting devices may further comprise a hole-transporting layer formed between the mixed layer and the light-emitting layer. Electronic appliances comprising the light-emitting devices are also described.

IT 168091-66-5

RL: TEM (Technical or engineered material use); USES (Uses)
(hole-transporting material; light-emitting devices with
anthracene derivative-metal oxide composite layers and electronic
appliances using them)

RN 168091-66-5 HCAPLUS

CN 1,3,5-Benzenetriamine, N1,N1,N3,N3,N5,N5-hexakis(3-methylphenyl)-
(CA INDEX NAME)



INCL 428690000; 428917000; 313504000; 313506000; 257-E51.049
 CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
 Section cross-reference(s): 76
 IT 65181-78-4, 4,4'-Bis[N-(3-methylphenyl)-N-phenylamino]biphenyl
 123847-85-8, 4,4'-Bis[N-(1-naphthyl)-N-phenylamino]biphenyl
 139092-78-7, 4,4',4'''-Tris(N-carbazolyl)triphenylamine
 168091-66-5 787640-67-9 913655-59-1
 RL: TEM (Technical or engineered material use); USES (Uses)
 (hole-transporting material; light-emitting devices with anthracene derivative-metal oxide composite layers and electronic appliances using them)

L28 ANSWER 2 OF 55 HCAPLUS COPYRIGHT 2008 ACS on STN
 ACCESSION NUMBER: 2006:1338929 HCAPLUS Full-text
 DOCUMENT NUMBER: 146:71614
 TITLE: Light-emitting element, light-emitting device, and electronic device
 INVENTOR(S): Sakata, Junichiro; Ikeda, Hisao; Aoyama, Tomoya; Kawakami, Takahiro; Iwaki, Yuji; Seo, Satoshi
 PATENT ASSIGNEE(S): Japan
 SOURCE: U.S. Pat. Appl. Publ., 31pp.
 CODEN: USXXCO
 DOCUMENT TYPE: Patent
 LANGUAGE: English
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 20060284189	A1	20061221	US 2006-448124	20060607
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JP 2007019489	A	20070125	JP 2006-159754	20060608
			<--	
PRIORITY APPLN. INFO.:			JP 2005-167620	A 20050608
			<--	

AB Light-emitting elements which comprise a light-emitting layer including a green light-emitting substance (e.g., coumarin 6) between a first electrode

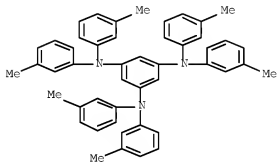
and a second electrode, and a mixed layer including a hole-transporting substance and a metal oxide having an electron-accepting property (relative to the hole-transporting substance) between the first electrode and the second electrode; are described in which the mixed layer is in contact with the first electrode and has a thickness of 120-180 nm, and the light-emitting substance emits light when a voltage is applied between the first electrode and the second electrode such that a potential of the first electrode becomes higher than a potential of the second electrode. Displays with the element as pixels and electronic devices using the displays are also described. The mixed layers allow for simple adjustment of optical path length between the light-emitting layer and an output electrode.

IT 168091-66-5

RL: TEM (Technical or engineered material use); USES (Uses)
(electroluminescent devices with mixed metal oxide-hole-transporting material layers and displays using them and electronic devices using the displays)

RN 168091-66-5 HCAPLUS

CN 1,3,5-Benzenetriamine, N1,N1,N3,N3,N5,N5-hexakis(3-methylphenyl)-
(CA INDEX NAME)



INCL 257079000

CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

Section cross-reference(s): 74, 76

IT 1313-27-5, Molybdenum oxide, uses 2085-33-8, Tris(8-hydroxyquinolinato)aluminum 38215-36-0, Coumarin 6 65181-78-4, 4,4'-Bis[N-(3-methylphenyl)-N-phenylamino]biphenyl 123847-85-8, 4,4'-Bis[N-(1-naphthyl)-N-phenylamino]biphenyl 139092-78-7, 4,4',4''-Tris(N-carbazolyl)triphenylamine 168091-66-5 199121-98-7

RL: TEM (Technical or engineered material use); USES (Uses)
(electroluminescent devices with mixed metal oxide-hole-transporting material layers and displays using them and electronic devices using the displays)

L28 ANSWER 3 OF 55 HCAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2006:1228232 HCAPLUS Full-text

DOCUMENT NUMBER: 146:16044

TITLE: Light emitting device and electronic appliance
using the same

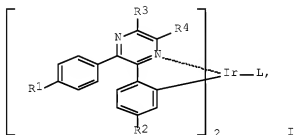
INVENTOR(S): Ohsawa, Nobuharu; Inoue, Hideko; Seo, Satoshi;
Shitagaki, Satoko

PATENT ASSIGNEE(S): Semiconductor Energy Laboratory Co., Ltd., Japan

SOURCE: U.S. Pat. Appl. Publ., 49pp.

DOCUMENT TYPE: CODEN: USXXCO
 LANGUAGE: Patent
 FAMILY ACC. NUM. COUNT: English 1
 PATENT INFORMATION:

PATENT NO. -----	KIND ----	DATE -----	APPLICATION NO. -----	DATE
US 20060263636	A1	20061123	US 2006-431648	200605 09
JP 2006352102	A	20061228	JP 2006-138952	200605 18
CN 1866576	A	20061122	CN 2006-10084751	200605 19
PRIORITY APPLN. INFO.:			JP 2005-148777	200505 20
OTHER SOURCE(S):				
GI				



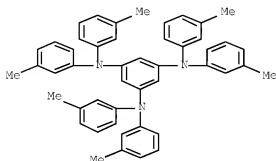
AB A TEM emitting device is described comprising a light emitting layer between a first electrode and a second electrode; a hole transporting layer between the first electrode and the light emitting layer wherein the hole transporting layer contacts with the light emitting layer; an electron transporting layer between the second electrode and the light emitting layer wherein the electron transporting layer contacts with the light emitting layer; and a mixed layer between the electron transporting layer and the second electrode wherein the mixed layer includes an electron transporting substance and a substance showing an electron donating property with respect to the electron transporting substance, wherein the light emitting layer includes an organometallic complex represented by the general formula I and a host, wherein R1 and R2 each represent an electron-withdrawing group, R3 and R4 each represent any one of hydrogen or an alkyl group having 1 to 4 carbon atoms, L represents a monoanionic ligand.

IT 168091-66-5
 RL: TEM (Technical or engineered material use); USES (Uses)
 (hole transporting layer; light emitting device using

organometallic complex and electronic appliance using same)

RN 168091-66-5 HCAPLUS

CN 1,3,5-Benzenetriamine, N1,N1,N3,N3,N5,N5-hexakis(3-methylphenyl)-
(CA INDEX NAME)



INCL 428690000; 428917000; 313504000; 313506000; 257-E51.044

CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

Section cross-reference(s): 76, 78

IT 65181-78-4, 4,4'-Bis[N-(3-methylphenyl)-N-phenylamino]biphenyl
139092-78-7, 4,4',4''-Tris(N-carbazolyl) triphenylamine
168091-66-5

RL: TEM (Technical or engineered material use); USES (Uses)
(hole transporting layer; light emitting device using
organometallic complex and electronic appliance using same)

L28 ANSWER 4 OF 55 HCAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2006:1156032 HCAPLUS Full-text

DOCUMENT NUMBER: 145:480151

TITLE: Light emitting element with a mixed layer
including an aromatic hydrocarbon and a metal
oxide, light emitting device, and electronic
device

INVENTOR(S): Iwaki, Yuji; Seo, Satoshi; Kawakami, Takahiro;
Ikeda, Hisao; Sakata, Junichiro

PATENT ASSIGNEE(S): Semiconductor Energy Laboratory Co., Ltd., Japan

SOURCE: PCT Int. Appl., 79pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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WO 2006115232	A1	20061102	WO 2006-JP308481	200604 17

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CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI,
GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, KE, KG, KM, KN,
KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, LY, MA, MD, MG, MK,

MN, MW, MX, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO,
 RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ,
 UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW
 RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU,
 IE, IS, IT, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR,
 BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD,
 TG, BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM,
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JP 2006324650 A 20061130 JP 2006-113439

200604
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 KR 2008005441 A 20080111 KR 2007-727093

200711
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 CN 101203968 A 20080618 CN 2006-80022551

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 PRIORITY APPLN. INFO.: JP 2005-124296 A

200504
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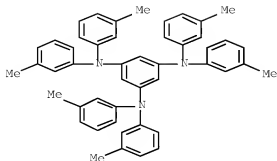
AB One aspect of the present invention is a light emitting element having a layer including an aromatic hydrocarbon and a metal oxide between a pair of electrodes. The kind of aromatic hydrocarbon is not particularly limited; however, an aromatic hydrocarbon having hole mobility of $1 + 10^{-6}$ cm²/Vs or more is preferable. Examples of such aromatic hydrocarbons are 2-tert-butyl-9,10-di(2-naphthyl)anthracene, anthracene, 9,10-diphenylanthracene, tetracene, rubrene, perylene, and 2,5,8,11-tetra(tert-butyl)perylene. As the metal oxide, a metal which shows an electron-accepting property to the aromatic hydrocarbon is preferable, with examples such as molybdenum oxide, vanadium oxide, ruthenium oxide, and rhenium oxide.

IT 168091-66-5

RL: DEV (Device component use)
 (hole-transporting layer; light emitting element with mixed layer including aromatic hydrocarbon and metal oxide, light emitting device, and electronic device)

RN 168091-66-5 HCAPLUS

CN 1,3,5-Benzenetriamine, N1,N1,N3,N3,N5,N5-hexakis(3-methylphenyl)-
 (CA INDEX NAME)



CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

Section cross-reference(s): 74, 76

IT 65181-78-4, 4,4'-Bis[N-(3-methylphenyl)-N-phenylamino]biphenyl

123847-85-8, 4,4'-Bis[N-(1-naphthyl)-N-phenylamino]biphenyl

139092-78-7, 4,4',4''-Tris(N-carbazolyl)triphenylamine

168091-66-5 787640-67-9 913655-59-1

RL: DEV (Device component use)

(hole-transporting layer; light emitting element with mixed layer including aromatic hydrocarbon and metal oxide, light emitting device, and electronic device)

REFERENCE COUNT: 12 THERE ARE 12 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L28 ANSWER 5 OF 55 HCAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2006:1069986 HCAPLUS Full-text

DOCUMENT NUMBER: 145:429603

TITLE: Display device including a light-emitting element and electronic device using the same

INVENTOR(S): Hayakawa, Masahiko; Yoshitomi, Shuhei; Tokumaru, Ryo

PATENT ASSIGNEE(S): Semiconductor Energy Laboratory Co., Ltd., Japan

SOURCE: U.S. Pat. Appl. Publ., 23pp.

CODEN: USXXCO

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 20060228822	A1	20061012	US 2006-389233	20060327
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CN 1849023	A	20061018	CN 2006-10071996	20060406
			<--	
JP 2006317921	A	20061124	JP 2006-108185	20060411
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PRIORITY APPLN. INFO.:

JP 2005-113054

A

200504

11

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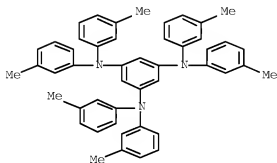
AB A display device and an electronic device is described in which the display device can accurately correct an elec. potential transmitted to a light-emitting element by using a light-emitting element and a monitoring light-emitting element both of which have the same progress of change with time. The display device uses a first light-emitting element, a second light-emitting element, a constant current source, and an amplifier. Each of the first light-emitting element and the second light-emitting element has a first layer including an organic compound and an inorg. compound and a second layer including a light-emitting substance, which are stacked between a pair of electrodes. The first layer is provided over the second layer. Alternatively, the second layer is provided over the first layer.

IT 168091-66-5

RL: TEM (Technical or engineered material use); USES (Uses)
(display device including a light-emitting element and electronic device using the same)

RN 168091-66-5 HCAPLUS

CN 1,3,5-Benzenetriamine, N1,N1,N3,N3,N5,N5-hexakis(3-methylphenyl)-
(CA INDEX NAME)



INCL 438034000

CC 74-13 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

IT 147-14-8, Copper phthalocyanine 517-51-1, 5,6,11,12-Tetraphenyl naphthacene 574-93-6, Phthalocyanine 1308-38-9, Chromium oxide, uses 1313-13-9, Manganese oxide, uses 1313-27-5, Molybdenum oxide, uses 1313-96-8, Niobium oxide 1314-23-4, Zirconium oxide, uses 1314-35-8, Tungsten oxide, uses 1314-61-0, Tantalum oxide 1314-62-1, Vanadium oxide, uses 2085-33-8, Tris(8-quinolinolato)aluminum 12055-23-1, Hafnium oxide 12624-27-0, Rhenium oxide 13463-67-7, Titanium oxide, uses 13930-88-6, Vanadyl phthalocyanine 19205-19-7, N,N'-Dimethylquinacridone 38215-36-0 65181-78-4, 4,4'-Bis[N-(3-methylphenyl)-N-phenylamino]biphenyl 105389-36-4, 4,4',4''-Tris(N,N-diphenylamino)triphenylamine 122648-99-1, 9,10-Di(2-naphthyl)anthracene 123847-85-8, 4,4'-Bis[N-(1-naphthyl)-N-phenylamino]biphenyl 124729-98-2, 4,4',4''-Tris[N-(3-methylphenyl)-N-phenylamino]triphenylamine 134008-76-7 139092-78-7 168091-66-5 199121-98-7 873793-58-9 873793-75-0

RL: TEM (Technical or engineered material use); USES (Uses)
(display device including a light-emitting element and electronic

device using the same)

L28 ANSWER 6 OF 55 HCAPLUS COPYRIGHT 2008 ACS on STN
 ACCESSION NUMBER: 2006:437747 HCAPLUS Full-text
 DOCUMENT NUMBER: 144:458225
 TITLE: Light-emitting element and light emitting device
 using the same
 INVENTOR(S): Kumaki, Daisuke; Seo, Satoshi
 PATENT ASSIGNEE(S): Semiconductor Energy Laboratory Co., Ltd., Japan
 SOURCE: PCT Int. Appl., 90 pp.
 CODEN: PIXXD2
 DOCUMENT TYPE: Patent
 LANGUAGE: English
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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WO 2006049323	A1	20060511	WO 2005-JP20663	200511 04
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JP 2006156997	A	20060615	JP 2005-321041	200511 04
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CN 101053091	A	20071010	CN 2005-80037622	200511 04
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US 20070170847	A1	20070726	US 2006-584333	200606 23
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PRIORITY APPLN. INFO.:			JP 2004-322995	A 200411 05
<--				
			WO 2005-JP20663	W 200511 04
<--				
AB	Light-emitting elements comprising (in order) a first electrode, a first layer (or first region), a second layer (or second region), a layer containing a light-emitting material, and a second electrode are described in which the first layers includes an aromatic amine compound and a first substance that can act as an electron acceptor to the aromatic amine compound and the second			

layer includes a second substance which is a better electron transporter than a hole transporter, and a third substance showing an electron donating property to the second substance. The third substance may be an alkali metal oxide or an alkaline earth metal oxide. Displays employing the elements (and devices incorporating the displays) are also described.

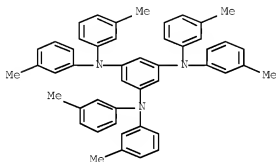
IT 168091-66-5

RL: DEV (Device component use); USES (Uses)

(organic light-emitting device structures using mixed material layers)

RN 168091-66-5 HCAPLUS

CN 1,3,5-Benzenetriamine, N1,N1,N3,N3,N5,N5-hexakis(3-methylphenyl)-(CA INDEX NAME)



CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

Section cross-reference(s): 76

IT 2085-33-8, Tris(8-quinolinolato)aluminum 123847-85-8,
4,4'-Bis[N-(1-naphthyl)-N-phenylamino]biphenyl 168091-66-5
787640-67-9

RL: DEV (Device component use); USES (Uses)

(organic light-emitting device structures using mixed material layers)

REFERENCE COUNT: 18 THERE ARE 18 CITED REFERENCES AVAILABLE
FOR THIS RECORD. ALL CITATIONS AVAILABLE
IN THE RE FORMAT

L28 ANSWER 7 OF 55 HCAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2006:343267 HCAPLUS [Full-text](#)

DOCUMENT NUMBER: 144:378761

TITLE: Light-emitting element having composite layers
of organic and inorganic compounds and
electronic devices employing the light-emitting
elementINVENTOR(S): Yamazaki, Shunpei; Ikeda, Hisao; Seo, Satoshi;
Kunaki, Daisuke; Sakata, Junichiro

PATENT ASSIGNEE(S): Semiconductor Energy Laboratory Co., Ltd., Japan

SOURCE: PCT Int. Appl., 56 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.

KIND DATE

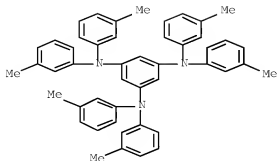
APPLICATION NO.

DATE

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WO 2006038573      A1      20060413      WO 2005-JP18225
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    GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM,
    KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, LY, MA, MD, MG, MK,
    MN, MW, MX, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO,
    RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ,
    UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW
RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU,
    IE, IS, IT, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR,
    BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD,
    TG, BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM,
    ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM
CN 101036246      A      20070912      CN 2005-80033466
                                         200509
                                         26
                                         <--
JP 2006128097      A      20060518      JP 2005-286201
                                         200509
                                         30
                                         <--
PRIORITY APPLN. INFO.:      JP 2004-290678      A
                                         200410
                                         01
                                         <--
                                         WO 2005-JP18225      W
                                         200509
                                         26
                                         <--
AB  Light-emitting elements are described which comprise at least a first
    electrode and a second electrode; a first layer between the first electrode
    and the second electrode, the first layer including a first organic compound
    and a first inorg. compound that exhibits an electron accepting property to
    the first organic compound; a second layer between the first layer and the
    second electrode, the second layer including a second organic compound that is
    luminescent and a second inorg. compound; and a third layer between a second
    layer and the second electrode, the third layer including a third organic
    compound and a third inorg. compound that exhibits an electron donating
    property to the third organic compound
IT  168091-66-5
    RL: DEV (Device component use); PRP (Properties); USES (Uses)
        (light-emitting element having composite layers of organic and
        inorg. compds. and electronic devices employing light-emitting
        element)
RN  168091-66-5      HCAPLUS
CN  1,3,5-Benzenetriamine, N1,N1,N3,N3,N5,N5-hexakis(3-methylphenyl)-
    (CA INDEX NAME)

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CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

Section cross-reference(s): 74, 76

IT 2085-33-8, Aluminum tris(8-hydroxyquinolino) 11098-99-0,

Molybdenum oxide 123847-85-8, NPB 168091-66-5

RL: DEV (Device component use); PRP (Properties); USES (Uses)
(light-emitting element having composite layers of organic and inorg. compds. and electronic devices employing light-emitting element)

REFERENCE COUNT: 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L28 ANSWER 8 OF 55 HCAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2006:193629 HCAPLUS [Full-text](#)

DOCUMENT NUMBER: 144:283342

TITLE: Method of manufacturing electron device and organic electroluminescent display and ink for organic amorphous film

INVENTOR(S): Yasukawa, Akiko; Uchino, Shoichi; Arai, Yoshihiro; Tanaka, Masahiro; Ito, Masato; Yaguchi, Tomio

PATENT ASSIGNEE(S): Japan

SOURCE: U.S. Pat. Appl. Publ., 17 pp.

CODEN: USXXCO

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 20060045959	A1	20060302	US 2005-207838	20050822
JP 2006066294	A	20060309	JP 2004-249050	20040827
CN 1741693	A	20060301	CN 2005-10093547	20050829

PRIORITY APPLN. INFO.:

JP 2004-249050

A

200408

27

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AB The present invention provides a method which can form a uniform amorphous film using an organic low mol. weight material which is refined by distillation or sublimation. The viscosity of ink is regulated by mixing two kinds of solvents so as to increase a surface tension of the ink and the solubility of the organic material in a drying step whereby an amorphous film made of an organic material is selectively formed in a recessed region defined by a partition wall layer using an ink jet method.

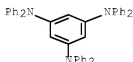
IT 126717-23-5

RL: DEV (Device component use); USES (Uses)

(Method of manufacturing electron device and organic electroluminescent display and ink for organic amorphous film)

RN 126717-23-5 HCAPLUS

CN 1,3,5-Benzenetriamine, N1,N1,N3,N3,N5,N5-hexaphenyl- (CA INDEX NAME)



INCL 427066000; 252301160

CC 74-13 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

IT 126717-23-5 693794-98-8

RL: DEV (Device component use); USES (Uses)

(Method of manufacturing electron device and organic electroluminescent display and ink for organic amorphous film)

L28 ANSWER 9 OF 55 HCAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2006:152776 HCAPLUS Full-text

DOCUMENT NUMBER: 144:222301

TITLE: Multilayered structures for light-emitting devices

INVENTOR(S): He, Gufeng; Pfeiffer, Martin; Blochwitz-Nimoth, Jan

PATENT ASSIGNEE(S): Novalis GmbH, Germany; Technische Universitaet Dresden

SOURCE: PCT Int. Appl., 51 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: German

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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WO 2006015567	A1	20060216	WO 2005-DE1076	20050616

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GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW

RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG, BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM

EP 1789994 A1 20070530 EP 2005-766723

20050616

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R: GB, NL

JP 2008509565 T 20080327 JP 2007-525155

20050616

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TW 285441 B 20070811 TW 2005-94123656

20050712

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KR 2007056061 A 20070531 KR 2007-703457

20070213

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US 20080203406 A1 20080828 US 2007-573617

20071012

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PRIORITY APPLN. INFO.: DE 2004-102004039594A

20040813

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EP 2004-19276 A

20040813

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WO 2005-DE1076 W

20050616

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AB Multilayered structures for light-emitting devices, especially phosphorescent organic light-emitting diodes, comprising a hole-injecting contact and an electron-injecting contact, each linked with a light-emitting region are described in which the light-emitting region comprises heterojunction formed from a light-emitting layer comprising an ambipolar (and preferably hole-transporting) material (M1) and another light-emitting layer comprising another ambipolar (and preferably electron-transporting) material (M2) between which a staggered type II interface is formed; M1 and M2 incorporate ≥1 triplet-emitting dopants and the energy barriers to hole transfer from M1 to M2 and to electron transfer from M2 to M1 are each .1 to 0.4 eV. Devices possessing the structures are also described.

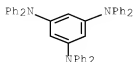
IT 126717-23-5, 1,3,5-Tris(diphenylamino)benzene

RL: DEV (Device component use)

(multilayered structures for light-emitting devices)

RN 126717-23-5 HCAPLUS

CN 1,3,5-Benzenetriamine, N1,N1,N3,N3,N5,N5-hexaphenyl- (CA INDEX NAME)



IC ICM H01L051-50
 CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
 Section cross-reference(s): 76
 IT 81-84-5, 1H,3H-Naphtho[1,8-cd]pyran-1,3-dione 91-19-0, Quinoxaline
 91-22-5, Quinoline, uses 110-02-1D, Thiophene, derivs.
 273-13-2D, 2,1,3-Benzothiadiazole, derivs. 288-88-0,
 1H-1,2,4-Triazole 542-92-7D, Cyclopentadiene, derivs. 629-20-9D,
 Cyclooctatetraene, derivs. 1662-01-7, Bathophenanthroline
 2085-33-8, Tris(8-hydroxyquinolinato)aluminum 2382-08-3
 11120-54-0D, Oxadiazole, derivs. 23749-58-8 36118-45-3D,
 Pyrazoline, derivs. 37275-48-2, Bipyridine 38332-84-2,
 Poly(p-perfluorophenylene) 65181-78-4, TPD 87433-10-1
 105389-36-4, 4,4',4''-Tris(N,N-diphenylamino)triphenylamine
 122738-21-0 124729-98-2, m-MTDATA 126717-23-5,
 1,3,5-Tris(diphenylamino)benzene 139092-78-7, 4,4',4''-Tris(N-
 carbazolyl)triphenylamine 139255-17-7 146162-54-1, BALq
 185690-39-5, 4,4',4''-Tris(N(1-naphthyl)-N-
 phenylamino)triphenylamine 189363-47-1 192198-85-9, TPBI
 350042-00-1
 RL: DEV (Device component use)
 (multilayered structures for light-emitting devices)
 REFERENCE COUNT: 9 THERE ARE 9 CITED REFERENCES AVAILABLE FOR
 THIS RECORD. ALL CITATIONS AVAILABLE IN
 THE RE FORMAT

L28 ANSWER 10 OF 55 HCAPLUS COPYRIGHT 2008 ACS on STN
 ACCESSION NUMBER: 2006:10788 HCAPLUS Full-text
 DOCUMENT NUMBER: 144:117899
 TITLE: Top-emitting organic electroluminescent devices
 showing resistance to water and oxygen
 INVENTOR(S): Kimura, Hiroshi
 PATENT ASSIGNEE(S): Fuji Electric Holding Co., Ltd., Japan
 SOURCE: Jpn. Kokai Tokkyo Koho, 17 pp.
 CODEN: JKXXAF
 DOCUMENT TYPE: Patent
 LANGUAGE: Japanese
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2006004721	A	20060105	JP 2004-178792	20040616

PRIORITY APPLN. INFO.: JP 2004-178792 20040616
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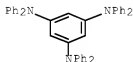
AB The device comprises a substrate, a reflection electrode, an organic electroluminescent layer, a transparent electrode, and a trapping agent layer, with the trapping layer containing ≥ 1 compd(s). contained in the layers forming the device. The trapping layer may be formed by vapor deposition. Also claimed are the said devices including ≥ 1 trapping agents selected from anthracene, coronene, perylene, rubrene, C₆H₅XZ (X = C₆H₄, etc.; Z = Ph, naphthyl, etc), certain complexes of Al, Be, Zn, Mg, Ga, etc., oxadiazoles, triazoles, thiophenes, etc. The organic electroluminescent layers can be protected from water and O.

IT 126717-23-5, p-DPA-TDAB

RL: DEV (Device component use); MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)
(p-DPA-TDAB, oxygen- and water-trapping agent; top-emitting organic electroluminescent devices equipped with water- and oxygen-trapping layers)

RN 126717-23-5 HCAPLUS

CN 1,3,5-Benzenetriamine, N1,N1,N3,N3,N5,N5-hexaphenyl- (CA INDEX NAME)



CC 74-13 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

IT 126717-23-5, p-DPA-TDAB

RL: DEV (Device component use); MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)
(p-DPA-TDAB, oxygen- and water-trapping agent; top-emitting organic electroluminescent devices equipped with water- and oxygen-trapping layers)

L28 ANSWER 11 OF 55 HCAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2005:1202886 HCAPLUS Full-text

DOCUMENT NUMBER: 144:202662

TITLE: Charge transport in amorphous molecular materials

AUTHOR(S): Shirota, Yasuhiko; Okumoto, Kenji; Ohishi, Hitoshi; Tanaka, Masatake; Nakao, Masato; Wayaku, Kenjiro; Nomura, Satoyuki; Kageyama, Hiroshi

CORPORATE SOURCE: Fukui Univ. of Technology, 3-6-1, Gakuen Fukui City, Fukui, 910-8505, Japan

SOURCE: Proceedings of SPIE-The International Society for Optical Engineering (2005), 5937(Organic Light-Emitting Materials and Devices IX), 593717/1-593717/10
CODEN: PSISDG; ISSN: 0277-786X

PUBLISHER: SPIE-The International Society for Optical Engineering

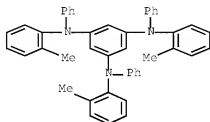
DOCUMENT TYPE: Journal

LANGUAGE: English

AB Charge carrier drift mobilities of hole-transporting amorphous mol. materials have been determined by a time-of-flight method. Elec.-field and temperature dependencies of carrier mobilities have been analyzed in terms of the disorder

formalism, and charge transport in amorphous mol. materials is discussed in relation to mol. structures. Hole-transporting amorphous mol. materials with high mobilities of the order of $10^{-2} \text{cm}^2 \text{V}^{-1} \text{s}^{-1}$ have been developed.

IT 142143-88-2, 1,3,5-Tris(2-methylphenylphenylamino)benzene
RL: PRP (Properties)
(charge-carrier drift mobilities of hole-transporting amorphous mol. materials by time-of-flight method)
RN 142143-88-2 HCAPLUS
CN 1,3,5-Benzenetriamine, N1,N3,N5-tris(2-methylphenyl)-N1,N3,N5-triphenyl- (CA INDEX NAME)



CC 76-1 (Electric Phenomena)
IT 65181-78-4, N, N'-Diphenyl-N, N'-bis(3-methylphenyl)-[1,1'-biphenyl]-4,4'-diamine 82532-74-9, 4-Diphenylaminobenzaldehyde methylphenylhydrazine 105389-36-4 142143-88-2, 1,3,5-Tris(2-methylphenylphenylamino)benzene 874946-05-1
RL: PRP (Properties)
(charge-carrier drift mobilities of hole-transporting amorphous mol. materials by time-of-flight method)
REFERENCE COUNT: 29 THERE ARE 29 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L28 ANSWER 12 OF 55 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2005:231570 HCAPLUS [Full-text](#)
DOCUMENT NUMBER: 142:306391
TITLE: Electrophotographic photoconductor, electrophotographic process, electrophotographic apparatus, and process cartridge
INVENTOR(S): Ikegami, Takaaki; Nohsho, Shinji; Kurimoto, Eiichi; Kami, Hidetoshi; Sugino, Akihiro; Yamashita, Yasuyuki; Nakamori, Hideo; Takada, Takeshi
PATENT ASSIGNEE(S): Ricoh Company, Japan
SOURCE: Eur. Pat. Appl., 246 pp.
CODEN: EPXXDW
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 1515192	A1	20050316	EP 2004-21562	20040910

R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC,
PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU,
PL, SK, HR

JP 2005084583 A 20050331 JP 2003-319362 200309
11

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JP 4079858	B2	20080423	
JP 2005092068	A	20050407	JP 2003-328177

200309
19

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JP 2005107471	A	20050421	JP 2003-421103
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200312
18

JP 2006030784 A 20060202 JP 2004-211846 200407
20

CN 1619425 A 20050525 CN 2004-10103887 200409
13

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US 20050118518	A1	20050602	US 2004-938585
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200409
13

US 7314693 B2 20080101 <--
PRIORITY APPLN. INFO.: JP 2003-319362 A 200309
11

JP 2003-321814 A 20030912

JP 2003-328177 A 20030919

JP 2003-421103 A 20031218

JP 2004-211846 A 20040720

OTHER SOURCE(S) : MARPAT 142:306391

AB The present invention relates to an electrophotog. photoconductor comprising a photoconductive layer, a protective layer, and a conductive support, wherein the protective layer is disposed as the outermost layer of the photoconductive layer, and 20 % by volume to 60 % by volume of fine particles of fluorine-contained resin and at least one compound selected from amine aromatic compds. and hydroxy aromatic compds. are incorporated into the protective layer. According to the present invention, high durability may be achieved, image degradation such as lags may be controlled from the increase of residual potential and decrease of charging, and high quality images may be formed

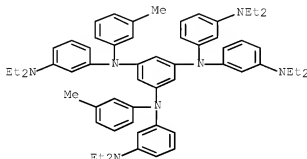
stably even after the prolonged and repeated usage. The present invention also relates to an electrophotog. process, an electrophotog. apparatus and a process cartridge for the electrophotog. apparatus which utilize the electrophotog. photoconductor resp.

IT 847872-27-9

RL: TEM (Technical or engineered material use); USES (Uses)
(protective layer of electrophotog. photoconductor, containing)

RN 847872-27-9 HCAPLUS

CN 1,3,5-Benzenetriamine, N1,N1,N3,N5-tetrakis[3-(diethylamino)phenyl]-
N3,N5-bis(3-methylphenyl)- (CA INDEX NAME)



IC ICM G03G005-147

CC 74-3 (Radiation Chemistry, Photochemistry, and Photographic and
Other Reprographic Processes)

IT 88-58-4 4483-91-4 7030-63-9 7475-96-9 10004-39-4

26172-18-9 27907-76-2 33906-02-4 42051-93-4 62555-82-2
64287-26-9 67707-84-0 85979-45-9 94939-64-7 96924-07-1
101836-19-5 113318-52-8 119062-22-5 119564-40-8 119629-15-1
139601-36-8 170636-06-3 205327-03-3 501367-56-2 501367-58-4
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847872-49-5 847872-50-8 847872-51-9 847872-52-0 847872-53-1
847872-54-2

RL: TEM (Technical or engineered material use); USES (Uses)
(protective layer of electrophotog. photoconductor, containing)

REFERENCE COUNT: 16 THERE ARE 16 CITED REFERENCES AVAILABLE
FOR THIS RECORD. ALL CITATIONS AVAILABLE
IN THE RE FORMAT

L28 ANSWER 13 OF 55 HCAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2005:138480 HCAPLUS Full-text

DOCUMENT NUMBER: 142:249440

TITLE: Organic electroluminescent elements with improved brightness, emission efficiency, and durability and lighting apparatus and displays using them

INVENTOR(S): Oshiyama, Tomohiro; Kato, Eisaku; Suzurizato, Yoshiyuki; Kita, Hiroshi

PATENT ASSIGNEE(S): Konica Minolta Holdings, Inc., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 57 pp.
CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2005044791	A	20050217	JP 2004-195397	20040701
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PRIORITY APPLN. INFO.:			JP 2003-193520	A 20030708
<--				

OTHER SOURCE(S): MARPAT 142:249440

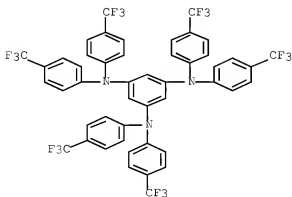
AB The elements, useful for blue- or white-emitting backlights for LCD, have layers containing triarylamine derivs. bearing electron-withdrawing groups adjacent to light-emitting layers between anodes and cathodes. The layers show good hole-barrier properties.

IT 844665-53-8 844665-54-9

RL: DEV (Device component use); USES (Uses)
(hole-barrier layer; organic EL elements containing electron-withdrawing triarylamines in hole-barrier layers for displays with good brightness, emission efficiency, and durability)

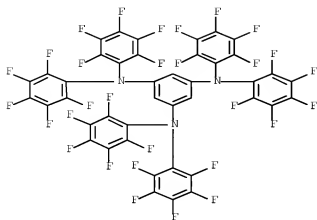
RN 844665-53-8 HCAPLUS

CN 1,3,5-Benzenetriamine, N1,N1,N3,N3,N5,N5-hexakis[4-(trifluoromethyl)phenyl]- (CA INDEX NAME)



RN 844665-54-9 HCAPLUS

CN 1,3,5-Benzenetriamine, N1,N1,N3,N3,N5,N5-hexakis(2,3,4,5,6-pentafluorophenyl)- (CA INDEX NAME)



IC ICM H05B033-22
 ICS C07C211-56; C09K011-06; H05B033-14
 CC 74-13 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
 Section cross-reference(s): 73
 IT 1821-41-6 152842-19-8 817638-43-0 817638-44-1 817638-51-0
 844665-51-6 844665-52-7 844665-53-8 844665-54-9
 844665-55-0 844665-56-1 844665-57-2 844665-58-3 844665-59-4
 RL: DEV (Device component use); USES (Uses)
 (hole-barrier layer; organic EL elements containing electron-withdrawing triarylamines in hole-barrier layers for displays with good brightness, emission efficiency, and durability)

L28 ANSWER 14 OF 55 HCAPLUS COPYRIGHT 2008 ACS on STN
 ACCESSION NUMBER: 2005:35085 HCAPLUS [Full-text](#)
 DOCUMENT NUMBER: 142:102910
 TITLE: Organic electroluminescent device, illuminating device, and display
 INVENTOR(S): Oshiyama, Tomohiro; Kita, Hiroshi; Katoh, Eisaku
 PATENT ASSIGNEE(S): Konica Minolta Holding, Inc., Japan
 SOURCE: PCT Int. Appl., 80 pp.
 CODEN: PIXXD2
 DOCUMENT TYPE: Patent
 LANGUAGE: Japanese
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2005004549	A1	20050113	WO 2004-JP9391	20040625

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VC, VN, YU, ZA, ZM, ZW
 RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW,
 AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ,
 DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL,
 PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ,
 GW, ML, MR, NE, SN, TD, TG
 EP 1651013 A1 20060426 EP 2004-746860

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 PL, SK, HR
 CN 1817066 A 20060809 CN 2004-80019019

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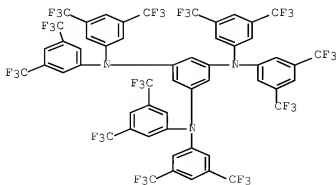
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 US 20070099025 A1 20070503 US 2005-562652
 200512
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 US 7371469 B2 20080513
 PRIORITY APPLN. INFO.: JP 2003-193519 A
 200307
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 WO 2004-JP9391 W
 200406
 25

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 AB An organic electroluminescent device comprising at least a light-emitting layer containing a phosphorescent compound between an anode and a cathode is characterized by comprising an adjoining layer so arranged between the light-emitting layer and the cathode as to be adjacent to the light-emitting layer and containing a compound with an electron-withdrawing group having an HOMO at -5.7 eV to -7.0 eV and an LUMO at -1.3 eV to -2.3 eV.

IT 817638-41-8
 RL: DEV (Device component use); USES (Uses)
 (organic electroluminescent device, illumination apparatus and display)
 RN 817638-41-8 HCAPLUS
 CN 1,3,5-Benzenetriamine, N1,N1,N3,N3,N5,N5-hexakis[3,5-bis(trifluoromethyl)phenyl]- (CA INDEX NAME)



IC ICM H05B033-22
ICS H05B033-14; G02F001-1335
CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
Section cross-reference(s): 74
IT 372956-40-6 817638-41-8 817638-42-9 817638-43-0
817638-44-1 817638-45-2 817638-46-3 817638-47-4 817638-48-5
817638-49-6 817638-50-9 817638-51-0 817638-53-2 817638-55-4
817638-56-5
RL: DEV (Device component use); USES (Uses)
(organic electroluminescent device, illumination apparatus and display)
REFERENCE COUNT: 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR
THIS RECORD. ALL CITATIONS AVAILABLE IN
THE RE FORMAT

L28 ANSWER 15 OF 55 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2004:957380 HCAPLUS Full-text
DOCUMENT NUMBER: 141:396986
TITLE: Organic colorants with metallic gloss and
film-forming materials containing them with
excellent dispersion stability
INVENTOR(S): Ogura, Katsuyuki; Kurata, Ryuichiro; Kano,
Fumihisa
PATENT ASSIGNEE(S): Chiba University, Japan; Toyo Ink Mfg. Co., Ltd.
SOURCE: Jpn. Kokai Tokkyo Koho, 23 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2004315545	A	20041111	JP 2003-55065	20030303

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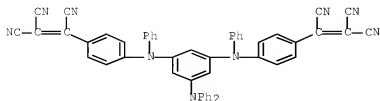
PRIORITY APPLN. INFO.: JP 2003-52095 A 20030228

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AB The colorants, useful for writing and printing inks and coatings, are depicted as AⁿNRXC(CN):C(CN)2ⁿ [A = (un)substituted aromatic, heterocyclic, condensed, or spirocyclic ring residue, (un)substituted biphenyl, fluorene, or triphenylamine-based dendrimer residue; X = (un)substituted aromatic or heterocyclic ring residue; R = (un)substituted aromatic group, heterocyclic group, alkyl, alkenyl, or cycloalkyl; n ≥ 2]. Thus, an ink containing N,N'-bis(4-tricyanoethenylphenyl)-N,N'-diphenylbenzidine (prepared from N,N,N',N'-tetraphenylbenzidine and tetracyanoethylene), a rosin-modified phenolic resin, and a petroleum-type solvent showed good gloss and adhesion to paper and metal.

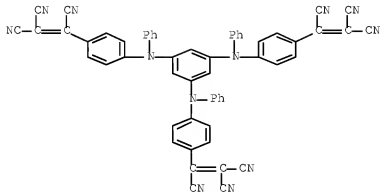
IT 790256-28-9P, 1,3-Bis[[4-(tricyanoethenyl)phenyl]phenylamino]-5-(diphenylamino)benzene 790256-29-9P,
1,3,5-Tris[[4-(tricyanoethenyl)phenyl]phenylamino]benzene
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(colorant; organic colorants with metallic gloss for inks and coatings with good storage stability)
RN 790256-28-9 HCAPLUS

CN Ethenetricarbonitrile, 2,2'-[[5-(diphenylamino)-1,3-phenylene]bis[(phenylimino)-4,1-phenylene]]bis- (9CI) (CA INDEX NAME)



RN 790256-29-0 HCAPLUS

CN Ethenetricarbonitrile, 2,2',2''-[1,3,5-benzenetriyltris[(phenylimino)-4,1-phenylene]]tris- (9CI) (CA INDEX NAME)



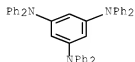
IT 126717-23-5, 1,3,5-Tris(diphenylamino)benzene

RL: RCT (Reactant); RACT (Reactant or reagent)

(for colorant preparation; organic colorants with metallic gloss for inks and coatings with good storage stability)

RN 126717-23-5 HCAPLUS

CN 1,3,5-Benzenetriamine, N1,N1,N3,N3,N5,N5-hexaphenyl- (CA INDEX NAME)



IC ICM C09B023-00

ICS C08L005-00; C08L101-00; C09D007-12; C09D201-00

CC 42-12 (Coatings, Inks, and Related Products)

Section cross-reference(s): 25, 41

IT 790256-24-5P, N,N'-Bis(4-tricyanoethenylphenyl)-N,N'-diphenylbenzidine 790256-25-6P, 2,7-Bis[N-phenyl-N-[p-

(tricyanoethenyl)phenyl]amino]fluorene 790256-27-8P,
 9-(Dicyanomethylene)-2,7-bis[[N-phenyl-N-(4-
 tricyanophenyl)amino]fluorene 790256-28-9P,
 1,3-Bis[[4-(tricyanoethenyl)phenyl]phenylamino]-5-
 (diphenylamino)benzene 790256-29-0P, 1,3,5-Tris[[4-
 (tricyanoethenyl)phenyl]phenylamino]benzene 790256-30-3P,
 Tris[4-[N-[4-(tricyanoethenyl)phenyl]phenylamino]phenyl]amine
 790256-31-4P, 2-(Diphenylamino)-2',7',7'-tris[N-phenyl-[4-
 (tricyanoethenyl)phenyl]amino]-9,9'-spirofluorene 790256-32-5P,
 2,2',7,7'-Tetrakis[N-phenyl-[4-(tricyanoethenyl)phenyl]amino]-9,9'-
 spirofluorene 790256-34-7P, 2,2-Bis[4-[N-phenyl-N-[p-
 (tricyanoethenyl)phenyl]amino]phenyl]propane 790256-35-8P,
 1,3-Bis[N-methyl-p-(tricyanoethenyl)anilino]-5-(N-
 methylanilino)benzene 790256-36-9P, 1,3,5-Tris[N-methyl-p-
 (tricyanoethenyl)anilino]benzene

RL: IMF (Industrial manufacture); TEM (Technical or engineered
 material use); PREP (Preparation); USES (Uses)
 (colorant; organic colorants with metallic gloss for inks and
 coatings with good storage stability)

IT 100-61-8, N-Methylaniline, reactions 122-39-4, Diphenylamine,
 reactions 626-39-1, 1,3,5-Tribromobenzene 670-54-2,
 Tetracyanoethylene, reactions 15546-43-7, N,N,N',N'-
 Tetraphenylbenzidine 105389-36-4 113933-91-8,
 2,7-Bis(diphenylamino)fluorene 126717-23-5,
 1,3,5-Tris(diphenylamino)benzene 128055-74-3, 2,2',7,7'-Tetrabromo-
 9,9'-spirofluorene 790256-26-7, 9-(Dicyanomethylene)-2,7-
 bis(diphenylamino)fluorene 790256-33-6, 2,2-Bis[4-
 (diphenylamino)phenyl]propane

RL: RCT (Reactant); RACT (Reactant or reagent)
 (for colorant preparation; organic colorants with metallic gloss for inks
 and coatings with good storage stability)

L28 ANSWER 16 OF 55 HCAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2004:801715 HCAPLUS Full-text

DOCUMENT NUMBER: 141:304040

TITLE: Organic EL device with high emission efficiency
 and long service life, its manufacture, and
 organic EL panel assembled with same

INVENTOR(S): Koshiishi, Akira; Nada, Naoshi; Tomioka, Satoshi

PATENT ASSIGNEE(S): Sony Corp., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 14 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

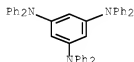
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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JP 2004273163	A	20040930	JP 2003-59013	200303 05

PRIORITY APPLN. INFO.: JP 2003-59013
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AB The organic EL device consists of ≥ 1 layers of organic layers involving light-
 emitting layers (LEL) between a pair of electrode layers, ≥ 1 of which are

transparent electrodes, wherein an electron transfer-controlling layer (ETCL) which restricts the flow of electrons to LEL, preferably comprising α -NPD, TPD, m-TPD, 1-TNATA, p-PMTDATA, TFATA, TCATA, p-DPA-TDAB, MTDAPB, p-BPD, PFPA or FPD, is provided between the electrode layers, hence only electrons which contribute to light emission are injected to LEL from ETCL, thereby improving emission efficiency, suppressing elec. power consumption, and achieving long service life. Preferably, an electron-transporting layer (ETL) is formed between the electrode layer as a cathode and LEL, ETCL is formed between the ETL and the LEL, and the energy level of LUMO of ETCL is lower than that of ETL. The organic EL panel contains a plurality of the organic EL devices arranged on a substrate.

IT 126717-23-5, 1,3,5-Tris(diphenylamino)benzene
 RL: DEV (Device component use); USES (Uses)
 (p-DPA-TDAB, electron transfer-controlling layer; manufacture of organic EL device with high emission efficiency for organic EL panel)
 RN 126717-23-5 HCAPLUS
 CN 1,3,5-Benzenetriamine, N1,N1,N3,N3,N5,N5-hexaphenyl- (CA INDEX NAME)



IC ICM H05B033-22
 ICS H05B033-10; H05B033-14
 CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
 IT 126717-23-5, 1,3,5-Tris(diphenylamino)benzene
 RL: DEV (Device component use); USES (Uses)
 (p-DPA-TDAB, electron transfer-controlling layer; manufacture of organic EL device with high emission efficiency for organic EL panel)

L28 ANSWER 17 OF 55 HCAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2004:459223 HCAPLUS [Full-text](#)

DOCUMENT NUMBER: 141:173778

TITLE: A Bindschedler's Green-Based Arylamine: Its

Polycations with High-Spin Multiplicity

AUTHOR(S): Ito, Akihiro; Ino, Haruhiro; Matsui, Yuki;

Hirao, Yasukazu; Tanaka, Kazuyoshi; Kanemoto,

Katsuichi; Kato, Tatsuhisa

CORPORATE SOURCE: Department of Molecular Engineering, Graduate

School of Engineering, Kyoto University, Kyoto,

615-8510, Japan

SOURCE: Journal of Physical Chemistry A (2004

), 108(26), 5715-5720

CODEN: JPACAF; ISSN: 1089-5639

PUBLISHER: American Chemical Society

DOCUMENT TYPE: Journal

LANGUAGE: English

OTHER SOURCE(S): CASREACT 141:173778

AB Intramol. high-spin correlation in a series of the successively generated polycationic species of Bindschedler's green-based arylamine, N,N,N',N',N'',N''-hexakis[4-(dimethylamino)phenyl]-1,3,5- benzenetriamine (1), has been investigated by continuous wave (CW) and pulsed EPR spectroscopy. Cyclic voltammetry shows multiredox behavior of 1 that can be reversibly

oxidized from monocation to hexacation. Depending on the quantity of the added oxidant, the characteristic EPR spectra are observed for polycations of 1 in frozen solution. Unequivocal determination of the spin state at each oxidation stage of 1 is given by a pulsed EPR technique, i.e., electron spin transient nutation spectroscopy.

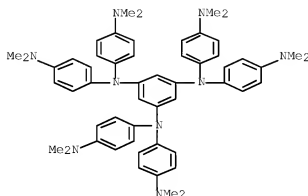
IT 733055-08-8P

RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); PRP (Properties); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); PROC (Process); RACT (Reactant or reagent)

(ESR and cyclic voltammetry study on polycations with high-spin multiplicity from Bindschedler's green-based arylamine)

RN 733055-08-8 HCAPLUS

CN 1,3,5-Benzenetriamine, N1,N1,N3,N3,N5,N5-hexakis[4-(dimethylamino)phenyl]- (CA INDEX NAME)



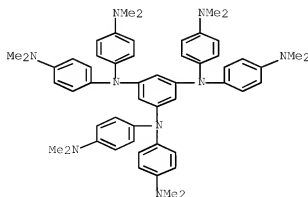
IT 733055-09-9

RL: FMU (Formation, unclassified); PRP (Properties); FORM (Formation, nonpreparative)

(ESR and cyclic voltammetry study on polycations with high-spin multiplicity from Bindschedler's green-based arylamine)

RN 733055-09-9 HCAPLUS

CN 1,3,5-Benzenetriamine, N,N,N',N',N'',N'''-hexakis[4-(dimethylamino)phenyl]-, radical ion(1+) (9CI) (CA INDEX NAME)



CC 22-8 (Physical Organic Chemistry)
 Section cross-reference(s): 77
 IT 733055-08-8P
 RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); PRP (Properties); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); PROC (Process); RACT (Reactant or reagent)
 (ESR and cyclic voltammetry study on polycations with high-spin multiplicity from Bindschedler's green-based arylamine)
 IT 733055-09-9 733055-10-2 733055-11-3 733055-12-4
 733055-13-5 733055-14-6
 RL: FMU (Formation, unclassified); PRP (Properties); FORM (Formation, nonpreparative)
 (ESR and cyclic voltammetry study on polycations with high-spin multiplicity from Bindschedler's green-based arylamine)
 REFERENCE COUNT: 36 THERE ARE 36 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L28 ANSWER 18 OF 55 HCAPLUS COPYRIGHT 2008 ACS on STN
 ACCESSION NUMBER: 2004:252470 HCAPLUS Full-text
 DOCUMENT NUMBER: 140:287163
 TITLE: Process for preparation of arylamines
 INVENTOR(S): Kubo, Shinji; Shintou, Taichi; Aoki, Hidenori
 PATENT ASSIGNEE(S): Sankio Chemical Co., Ltd., Japan
 SOURCE: PCT Int. Appl., 44 pp.
 CODEN: PIXXD2
 DOCUMENT TYPE: Patent
 LANGUAGE: Japanese
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2004024670	A1	20040325	WO 2003-JP11510	20030909
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W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
AU 2003264400	A1	20040430	AU 2003-264400	20030909
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GB 2408979	A	20050615	GB 2005-4952	20030909
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September 24, 2008

10/580,052

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GB 2408979
US 20060069287B 20060308
A1 20060330

US 2005-527064

200503
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US 7273953
PRIORITY APPLN. INFO.:

B2 20070925

JP 2002-264202

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200209
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WO 2003-JP11510

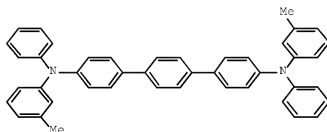
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OTHER SOURCE(S):
GI

CASREACT 140:287163



AB This invention pertains to a method for producing arylamines, which comprises reacting an aromatic halogen compound with an aromatic amine in the presence of an organic salt selected among specific pyridinium salts, imidazolium salts, and quaternary onium salts, a copper catalyst, and a base. For example, N-(3-methylphenyl)-N-phenylamine was reacted with 4,4''-diiododiphenyl in toluene in the presence of KOH, CuCl, and Bu4PBr to give the amine I (94.0%). By the process, a high-purity arylamine, especially triarylamine or diarylamine, can be produced at low cost.

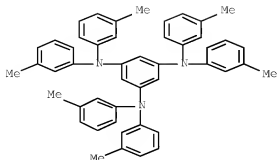
IT 168091-66-5P

RL: IMF (Industrial manufacture); SPN (Synthetic preparation); PREP (Preparation)

(preparation of arylamines by coupling reaction)

RN 168091-66-5 HCAPLUS

CN 1,3,5-Benzenetriamine, N1,N1,N3,N3,N5,N5-hexakis(3-methylphenyl)-
(CA INDEX NAME)



IC ICM C07C211-54
ICS C07C209-10

CC 25-4 (Benzene, Its Derivatives, and Condensed Benzenoid Compounds)
Section cross-reference(s): 45

IT 1150-62-5P 4316-54-5P 32228-99-2P 78774-91-1P 124729-98-2P
147850-54-2P 154576-20-2P 168091-66-5P 194296-19-0P
675583-36-5P 675583-37-6P 675583-38-7P 675583-39-8P
675583-40-1P 675583-41-2P 675583-42-3P 675583-43-4P
675583-44-5P 675583-45-6P 675583-46-7P

RL: IMF (Industrial manufacture); SPN (Synthetic preparation); PREP (Preparation)
(preparation of arylamines by coupling reaction)

REFERENCE COUNT: 8 THERE ARE 8 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L28 ANSWER 19 OF 55 HCAPLUS COPYRIGHT 2008 ACS ON STN
ACCESSION NUMBER: 2003:609758 HCAPLUS [Full-text](#)
DOCUMENT NUMBER: 139:171099
TITLE: Organic light-emitting devices employing phosphorescent material doped into the electron-transporting layer
Yamazaki, Hiroko; Tokuda, Atsushi; Tsutsui, Tetsuo

INVENTOR(S): Semiconductor Energy Laboratory Co., Ltd., USA
PATENT ASSIGNEE(S): U.S. Pat. Appl. Publ., 27 pp.
SOURCE: CODEN: USXXCO

DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 20030146443	A1	20030807	US 2002-304410	20021126
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US 6734457	B2	20040511		
JP 2003229275	A	20030815	JP 2002-341774	20021126
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JP 3759925	B2	20060329		

US 20040124425	A1	20040701	US 2003-737569	20031216
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JP 2005101002	A	20050414	JP 2004-360371	20041213
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US 20080143254	A1	20080619	US 2007-976781	20071029
			<--	
PRIORITY APPLN. INFO.:			JP 2001-360500	A 20011127
			<--	
			JP 2002-341774	A3 20021126
			<--	
			US 2002-304410	A1 20021126
			<--	
			US 2003-737569	A1 20031216
			<--	

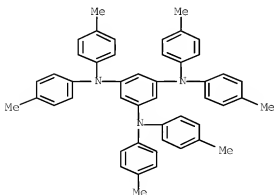
AB Light-emitting devices are described which comprise an anode, an optional hole-injection layer in contact with the anode, an organic compound film, an optional electron-injection layer in contact with a cathode, and a cathode, where the organic compound film comprises a hole-transporting layer containing a hole-transporting material; and an electron-transporting layer in contact with the hole-transporting layer and containing an electron-transporting material, where a light-emitting material capable of emitting light from a triplet excited state is added in the electron transporting layer.

IT 134257-64-0 168091-66-5 573968-20-4

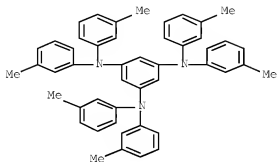
RL: DEV (Device component use); PRP (Properties); USES (Uses)
(hole-transporting layer; organic light-emitting devices employing phosphorescent material doped in electron-transporting layer)

RN 134257-64-0 HCAPLUS

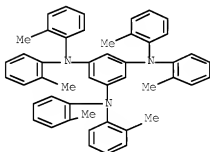
CN 1,3,5-Benzenetriamine, N1,N1,N3,N3,N5,N5-hexakis(4-methylphenyl)-
(CA INDEX NAME)



RN 168091-66-5 HCAPLUS

CN 1,3,5-Benzenetriamine, N1,N1,N3,N3,N5,N5-hexakis(3-methylphenyl)-
(CA INDEX NAME)

RN 573968-20-4 HCAPLUS

CN 1,3,5-Benzenetriamine, N1,N1,N3,N3,N5,N5-hexakis(2-methylphenyl)-
(CA INDEX NAME)

IC ICM H01L027-15

INCL 257080000

CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

Section cross-reference(s): 22, 76, 78

IT 134257-64-0 148044-07-9 163815-23-4 163091-66-5
573968-20-4RL: DEV (Device component use); PRP (Properties); USES (Uses)
(hole-transporting layer; organic light-emitting devices employing
phosphorescent material doped in electron-transporting layer)REFERENCE COUNT: 12 THERE ARE 12 CITED REFERENCES AVAILABLE
FOR THIS RECORD. ALL CITATIONS AVAILABLE
IN THE RE FORMAT

L28 ANSWER 20 OF 55 HCAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2002:237137 HCAPLUS [Full-text](#)

DOCUMENT NUMBER: 136:270534

TITLE: Electrophotographic photoreceptor

INVENTOR(S): Miyamoto, Eiichi; Inagaki, Yoshio; Fukunaga,
Hideaki

September 24, 2008

10/580,052

37

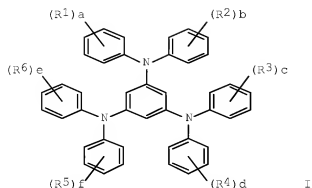
PATENT ASSIGNEE(S): Kyocera Mita Industrial Co., Ltd., Japan;
Kyocera Corp.
SOURCE: Jpn. Kokai Tokkyo Koho, 18 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 2
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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JP 2002091033	A	20020327	JP 2000-281052	20000918
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US 20020051918	A1	20020502	US 2001-910916	20010724
			<--	
US 6489071	B2	20021203		
PRIORITY APPLN. INFO.:			JP 2000-224240	A 20000725
			<--	
			JP 2000-243150	A 20000810
			<--	
			JP 2000-250409	A 20000822
			<--	
			JP 2000-281051	A 20000918
			<--	
			JP 2000-281052	A 20000918
			<--	
			JP 2000-311421	A 20001012
			<--	
			JP 2000-355340	A 20001122
			<--	
			JP 2000-366431	A 20001201
			<--	
			JP 2001-20876	A 20010130
			<--	
			JP 2001-20877	A 20010130

OTHER SOURCE(S):
GI

MARPAT 136:270534

<--



AB The invention relates to an electrophotog. photoreceptor which hardly forms cracks during the usage and storage. The electrophotog. photoreceptor comprises an organic photosensitive layer and an inorg. surface protective layer formed on a support, wherein the surface of photosensitive layer contacting the surface protective layer contains a triaminobenzene derivative represented by I (R1-6 = H, halo, alkyl, alkoxy, aryl; and a-f = 1-5). The surface protective layer contains an inorg. substance such as a-SiC, a-SiN, etc.

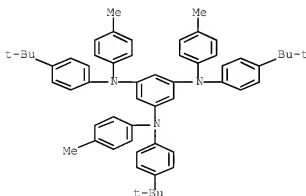
IT 393586-96-4 393586-97-5

RL: DEV (Device component use); USES (Uses)

(electrophotog. photoreceptor triaminobenzene derivative)

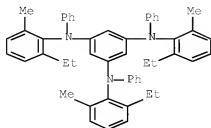
RN 393586-96-4 HCAPLUS

CN 1,3,5-Benzenetriamine, N1,N3,N5-tris[4-(1,1-dimethylethyl)phenyl]-
N1,N3,N5-tris(4-methylphenyl)- (CA INDEX NAME)



RN 393586-97-5 HCAPLUS

CN 1,3,5-Benzenetriamine, N1,N3,N5-tris(2-ethyl-6-methylphenyl)-
N1,N3,N5-triphenyl- (CA INDEX NAME)



IC ICM G03G005-06
ICS G03G005-147
CC 74-3 (Radiation Chemistry, Photochemistry, and Photographic and
Other Reprographic Processes)
Section cross-reference(s): 25
IT 393586-96-4 393586-97-5 393586-98-6
RL: DEV (Device component use); USES (Uses)
(electrophotog. photoreceptor triaminobenzene derivative)

L28 ANSWER 21 OF 55 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2002:87279 HCAPLUS [Full-text](#)
DOCUMENT NUMBER: 136:142582
TITLE: Electrosensitive material
INVENTOR(S): Miyamoto, Eiichi; Fukunaga, Hideaki; Inagaki,
Yoshio
PATENT ASSIGNEE(S): Kyocera Mita Corporation, Japan; Kyocera
Corporation
SOURCE: Eur. Pat. Appl., 246 pp.
CODEN: EPXXDW
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 2
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 1176469	A1	20020130	EP 2001-306364	20010725
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R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
JP 2002040689	A	20020206	JP 2000-224240	20000725
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JP 2002055467	A	20020220	JP 2000-243150	20000810
<--				
JP 2002062676	A	20020228	JP 2000-250409	20000822
<--				
JP 2002091031	A	20020327	JP 2000-281051	20000918

September 24, 2008

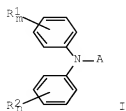
10/580,052

40

JP 2002123011	A	20020426	JP 2000-311421	<--	20001012
JP 2002156768	A	20020531	JP 2000-355340	<--	20001122
JP 2002169313	A	20020614	JP 2000-366431	<--	20001201
JP 2002229233	A	20020814	JP 2001-20876	<--	20010130
JP 2002229232	A	20020814	JP 2001-20877	<--	20010130
PRIORITY APPLN. INFO.:			JP 2000-224240	<--	20000725
			JP 2000-243150	<--	20000810
			JP 2000-250409	<--	20000822
			JP 2000-281051	<--	20000918
			JP 2000-311421	<--	20001012
			JP 2000-355340	<--	20001122
			JP 2000-366431	<--	20001201
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			JP 2001-20877	<--	20010130

OTHER SOURCE(S):
GI

MARPAT 136:142582



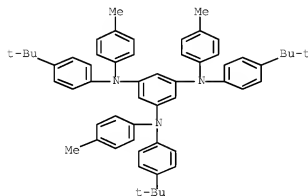
AB The invention disclosed an electrophotosensitive material comprising an organic photosensitive layer and an inorg. surface protective layer, wherein at least the outermost part of the organic photosensitive layer contains a diphenylamine compound I (A is a group which can jointly form a π -electron conjugated system with the two Ph groups in the formula; R1 and R2 each represent an H atom, halogen atom, alkyl group, alkoxy group, etc., and R1 and R2 may form a condensed ring with the Ph group; m, n = 0-5). The electrophotosensitive material has excellent durability because compound I functions as a binder for combining the organic photosensitive layer with the inorg. surface protective layer so that the surface protective layer is less prone to suffer cracks or delamination.

IT 393586-96-4 393586-97-5

RL: TEM (Technical or engineered material use); USES (Uses)
(pos.-hole transport compound in electrophotog. material)

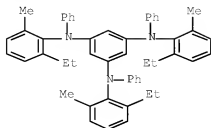
RN 393586-96-4 HCAPLUS

CN 1,3,5-Benzenetriamine, N1,N3,N5-tris[4-(1,1-dimethylethyl)phenyl]-
N1,N3,N5-tris(4-methylphenyl)- (CA INDEX NAME)



RN 393586-97-5 HCAPLUS

CN 1,3,5-Benzenetriamine, N1,N3,N5-tris(2-ethyl-6-methylphenyl)-
N1,N3,N5-triphenyl- (CA INDEX NAME)



IC ICM G03G005-147

ICS G03G005-06

CC 74-3 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

IT 65181-78-4 73276-70-7 89505-08-8 105465-13-2 106614-59-9
 119344-18-2 119586-43-5 124591-08-8 132037-07-1 132571-92-7
 132761-17-2 142017-30-9 151026-65-2 151259-33-5 159530-26-4
 167377-13-1 167377-38-0 168091-65-4 169509-14-2 170021-51-9
 173923-36-9 173923-37-0 173923-50-7 177407-52-2 179063-40-2
 179063-41-3 179063-46-8 179063-49-1 179550-47-1 208042-91-5
 208042-94-8 254897-50-2 256660-35-2 393586-77-1 393586-78-2
 393586-79-3 393586-80-6 393586-81-7 393586-82-8 393586-83-9
 393586-84-0 393586-85-1 393586-86-2 393586-87-3 393586-88-4
 393586-89-5 393586-90-8 393586-91-9 393586-92-0 393586-93-1
 393586-94-2 393586-95-3 393586-96-4 393586-97-5
 393586-98-6 393586-99-7 393587-00-3 393587-01-4 393587-05-8
 393587-06-9

RL: TEM (Technical or engineered material use); USES (Uses)
 (pos.-hole transport compound in electrophotog. material)

REFERENCE COUNT: 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR
 THIS RECORD. ALL CITATIONS AVAILABLE IN
 THE RE FORMAT

L28 ANSWER 22 OF 55 HCAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2002:8812 HCAPLUS [Full-text](#)

DOCUMENT NUMBER: 136:191337

TITLE: Durability and characteristics of organic EL
 device using amorphous materials as hole
 transporting materials

AUTHOR(S): Oh, Se Young; Lee, Chang Ho; Kim, Seung Wook

CORPORATE SOURCE: Department of Chemical Engineering, Sogang

University, Seoul, 121-742, S. Korea

SOURCE: Molecular Crystals and Liquid Crystals Science
 and Technology, Section A: Molecular Crystals
 and Liquid Crystals (2001), 371,
 423-426

CODEN: MCLCE9; ISSN: 1058-725X

PUBLISHER: Gordon & Breach Science Publishers

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Amorphous mol. materials such as 1,3,5-tris(4-chlorophenyl
 phenylamino)benzene, p-ClTDAB and p-BrTDAB were synthesized and then organic
 electroluminescent (EL) devices using the amorphous compds. as hole
 transporting materials were fabricated. ITO/p-XTDAB (X=Cl or Br)/Alq3/Al
 device emitted green light with the brightness of 1300 cd/m². Especially, the
 durability and EL performance were improved by p-XTDAB compared to TDAB.

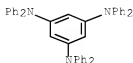
IT 126717-23-5

RL: DEV (Device component use); PRP (Properties); USES (Uses)

(TDAB; durability and characteristics of organic EL device using amorphous materials as hole transporting materials)

RN 126717-23-5 HCAPLUS

CN 1,3,5-Benzenetriamine, N1,N1,N3,N3,N5,N5-hexaphenyl- (CA INDEX NAME)

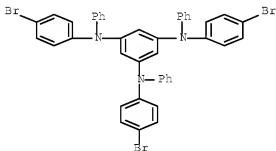


IT 177659-53-9

RL: DEV (Device component use); PRP (Properties); USES (Uses)
(p-BrTDAB; durability and characteristics of organic EL device using amorphous materials as hole transporting materials)

RN 177659-53-9 HCAPLUS

CN 1,3,5-Benzenetriamine, N1,N3,N5-tris(4-bromophenyl)-N1,N3,N5-triphenyl- (CA INDEX NAME)

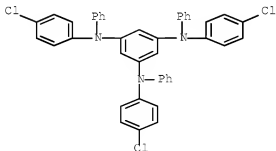


IT 177659-52-8

RL: DEV (Device component use); PRP (Properties); USES (Uses)
(p-ClTDAB; durability and characteristics of organic EL device using amorphous materials as hole transporting materials)

RN 177659-52-8 HCAPLUS

CN 1,3,5-Benzenetriamine, N1,N3,N5-tris(4-chlorophenyl)-N1,N3,N5-triphenyl- (CA INDEX NAME)



CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
IT 126717-23-5
RL: DEV (Device component use); PRP (Properties); USES (Uses)
(TDAB; durability and characteristics of organic EL device using amorphous materials as hole transporting materials)
IT 177659-53-9
RL: DEV (Device component use); PRP (Properties); USES (Uses)
(p-BrTDAB; durability and characteristics of organic EL device using amorphous materials as hole transporting materials)
IT 177659-52-8
RL: DEV (Device component use); PRP (Properties); USES (Uses)
(p-ClTDAB; durability and characteristics of organic EL device using amorphous materials as hole transporting materials)
REFERENCE COUNT: 2 THERE ARE 2 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L28 ANSWER 23 OF 55 HCAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2001:924914 HCAPLUS Full-text

DOCUMENT NUMBER: 136:158432

TITLE: Structural effects of TDAB amorphous hole transporting materials on performance of organic EL device

AUTHOR(S): Lee, Chang Ho; Kim, Seung Wook; Oh, Se Young
CORPORATE SOURCE: Department of Chemical Engineering, Sogang University, Seoul, 121-742, S. Korea

SOURCE: Molecular Crystals and Liquid Crystals Science and Technology, Section A: Molecular Crystals and Liquid Crystals (2001), 370, 53-56
CODEN: MCLCE9; ISSN: 1058-725X

PUBLISHER: Gordon & Breach Science Publishers

DOCUMENT TYPE: Journal

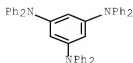
LANGUAGE: English

AB For the fabrication of high stable organic electroluminescent device, amorphous mol. materials such as 1,3,5-tris(diphenylamino)benzene (TDAB), 1,3,5-tris(4-chlorophenyl[phenyl]amino)benzene (p-ClTDAB), p-BrTDAB, and p-MeOTDAB were synthesized as hole transporting materials and studied ITO/p-XTDAB (X = Br, Cl, MeO)/Alq3/Al device emitted green light. Organic EL device consisting of ITO/p-BrTDAB/Alq3/Al showed high EL intensity. The durability and EL performance of organic EL device using the amorphous hole transporting material were studied.

IT 126717-23-5, 1,3,5-Tris(diphenylamino)benzene
177659-52-8, 1,3,5-Tris(4-chlorophenyl[phenyl]amino)benzene
177659-53-9, 1,3,5-Tris(4-bromophenyl[phenyl]amino)benzene
RL: DEV (Device component use); PRP (Properties); USES (Uses)
(structural effects of amorphous hole transporting material on performance of organic electroluminescent device)

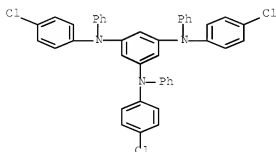
RN 126717-23-5 HCAPLUS

CN 1,3,5-Benzenetriamine, N1,N1,N3,N3,N5,N5-hexaphenyl- (CA INDEX NAME)



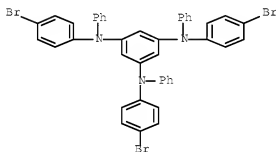
RN 177659-52-8 HCAPLUS

CN 1,3,5-Benzenetriamine, N1,N3,N5-tris(4-chlorophenyl)-N1,N3,N5-triphenyl- (CA INDEX NAME)



RN 177659-53-9 HCAPLUS

CN 1,3,5-Benzenetriamine, N1,N3,N5-tris(4-bromophenyl)-N1,N3,N5-triphenyl- (CA INDEX NAME)



CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

Section cross-reference(s): 22, 76

IT 126717-23-5, 1,3,5-Tris(diphenylamino)benzene

177659-52-8, 1,3,5-Tris(4-chlorophenyl[phenyl]amino)benzene

177659-53-9, 1,3,5-Tris(4-bromophenyl[phenyl]amino)benzene

395083-18-8

RL: DEV (Device component use); PRP (Properties); USES (Uses)
(structural effects of amorphous hole transporting material on performance of organic electroluminescent device)REFERENCE COUNT: 2
THERE ARE 2 CITED REFERENCES AVAILABLE FOR
THIS RECORD. ALL CITATIONS AVAILABLE IN
THE RE FORMAT

L28 ANSWER 24 OF 55 HCAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2001:403128 HCAPLUS [Full-text](#)

DOCUMENT NUMBER: 135:20079

TITLE: Transition metal complex catalysts and
trimerization of ethylene using themINVENTOR(S): Murakita, Shigeyuki; Yamamoto, Toshihide; Okada,
Hisanori; Yoshida, Osamu

PATENT ASSIGNEE(S): Tosoh Corp., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 14 pp.

DOCUMENT TYPE: CODEN: JKXXAF
LANGUAGE: Patent
FAMILY ACC. NUM. COUNT: 1 Japanese
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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JP 2001149788	A	20010605	JP 1999-339889	199911 30

PRIORITY APPLN. INFO.: <--
JP 1999-339889
199911
30

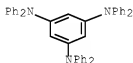
OTHER SOURCE(S): MARPAT 135:20079

AB Ethylene is trimerized in the presence of (A) transition metal complexes coordinated with amino-substituted benzene derivative ligands and optionally (B) tertiary aromatic amines and/or N-containing heterocyclic compds. Thus, trimerization of ethylene at 80° for 30 min in the presence of 1,3,5-tris(diphenylamino)benzenechromium tricarbonyl(0), in which the tris(diphenylamino)benzene ligand is facially coordinated to Cr, under radiation of light to give 1-hexene with selectivity 98.5%.

IT 126717-23-5, 1,3,5-Tris(diphenylamino)benzene
RL: RCT (Reactant); RACT (Reactant or reagent)
(transition metal complex catalysts for trimerization of ethylene for preparation of 1-hexene in high selectivity)

RN 126717-23-5 HCAPLUS

CN 1,3,5-Benzenetriamine, N1,N1,N3,N3,N5,N5-hexaphenyl- (CA INDEX NAME)



IC ICM B01J031-22

ICS C07B061-00; C07C002-34; C07C011-107; C08F004-69

CC 35-2 (Chemistry of Synthetic High Polymers)

IT 74-85-1, Ethylene, reactions 13007-92-6, Chromium hexacarbonyl 126717-23-5, 1,3,5-Tris(diphenylamino)benzene

RL: RCT (Reactant); RACT (Reactant or reagent)
(transition metal complex catalysts for trimerization of ethylene for preparation of 1-hexene in high selectivity)

L28 ANSWER 25 OF 55 HCAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2000:462278 HCAPLUS Full-text

DOCUMENT NUMBER: 134:116414

TITLE: Electronic structure of starburst molecules and their interfaces with ITO studied by UV photoemission

AUTHOR(S): Ishii, Hisao; Imai, Toshiaki; Morikawa, Eizi; Ito, Eisuke; Hasegawa, Shinji; Okudaira, Koji; Kamiya; Ueno, Nobuo; Shirota, Yasuhiko; Seki, Kazuhiko

CORPORATE SOURCE: Dep. Chem., Graduate School of Science, Nagoya Univ., Chikusa-ku Nagoya, Japan

SOURCE: Proceedings of SPIE-The International Society for Optical Engineering (1999), 3797 (Organic Light-Emitting Materials and Devices III), 375-382

PUBLISHER: CODEN: PSISDG; ISSN: 0277-786X

PUBLISHER: SPIE-The International Society for Optical Engineering

DOCUMENT TYPE: Journal

LANGUAGE: English

AB UV photoemission spectroscopy (UPS) was used to study electronic structures of starburst mols. derived from triphenylamine and their interfaces with indium tin oxide (ITO). The compds. studied were 1,3,5-tris(2-methylphenylphenylamino)benzene (o-MTDA), 4,4',4''-tris(3-methylphenylphenylamino)triphenylamine (m-MTDA), 1,3,5-tris[4-(3-methylphenylphenylamino)phenyl]benzene (m-MTDAPB), and 1,3,5-tris[N-(4-diphenylaminophenyl)phenylamino]benzene (p-DPA-TDAB). These compds. have good thermal stability and hole transport properties due to their amorphous character and are of interest for use in electroluminescent devices. The observed ionization potential is 5.4 plus or minus 0.1 eV, 5.0 plus or minus 0.1 eV, 5.45 plus or minus 0.05 eV, and 5.15 plus or minus 0.05 eV, for o-MTDA, m-MTDA, m-MTDAPB, and p-DPA-TDAB, resp. The whole valence region of UPS spectra was measured using synchrotron radiation. The bulk electronic structure of these mols. was correlated with MOPAC MO calcs. At ITO interfaces with the starburst triphenylamines, a vacuum level shift was observed, indicating that the traditional model with an assumption of a common vacuum level at organic/metal interfaces is not valid even in the case of ITO electrode. The direction of the shifts was neg., i.e., the vacuum level of the starburst mols. is below that of the ITO electrode. The magnitude of the shift was dependent on the surface cleanliness of the ITO substrate.

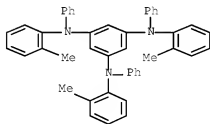
IT 142143-88-2, 1,3,5-Tris(2-methylphenylphenylamino)benzene

RL: PRP (Properties)

(electronic structure of triphenylamine starburst mols. and alignment with ITO interface studied by UV photoemission spectroscopy)

RN 142143-88-2 HCAPLUS

CN 1,3,5-Benzenetriamine, N1,N3,N5-tris(2-methylphenyl)-N1,N3,N5-triphenyl- (CA INDEX NAME)



CC 36-5 (Physical Properties of Synthetic High Polymers)

Section cross-reference(s): 65, 76

IT 124729-98-2, 4,4',4''-Tris(3-methylphenylphenylamino)triphenylamine

142143-88-2, 1,3,5-Tris(2-methylphenylphenylamino)benzene

153521-90-5, 1,3,5-Tris[N-(4-diphenylaminophenyl)phenylamino]benzene

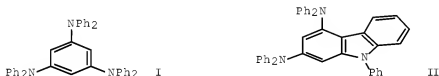
161581-07-3, 1,3,5-Tris[4-(3-methylphenylphenylamino)phenyl]benzene

RL: PRP (Properties)

(electronic structure of triphenylamine starburst mols. and alignment with ITO interface studied by UV photoemission spectroscopy)

REFERENCE COUNT: 9 THERE ARE 9 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

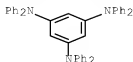
L28 ANSWER 26 OF 55 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2000:129529 HCAPLUS Full-text
DOCUMENT NUMBER: 132:279083
TITLE: Photochemical reaction of 1,3,5-tris(diphenylamino)benzene
AUTHOR(S): Moriwaki, Kazuyuki; Yoshikawa, Satoru; Kotani, Yoshiko; Ishida, Akito; Shiota, Yasuhiko
CORPORATE SOURCE: Department of Applied Chemistry, Faculty of Engineering, Osaka University, Suita, 565-0871, Japan
SOURCE: Journal of Photopolymer Science and Technology (1999), 12(5), 777-780
CODEN: JSTEED; ISSN: 0914-9244
PUBLISHER: Technical Association of Photopolymers, Japan
DOCUMENT TYPE: Journal
LANGUAGE: English
OTHER SOURCE(S): CASREACT 132:279083
GI



AB Photochem. reaction of a new aromatic amine with dual reaction sites for ring closure, 1,3,5-tris(diphenylamino)benzene I, was investigated to clarify its photochem. reaction course and the effect of oxygen on the photochem. reaction. It was found that I undergoes photocyclization in solution in the absence or presence of oxygen to produce N-phenyl-2,4-bis(diphenylamino)carbazole II. The product anal. and the result of laser flash photolysis indicate that the reaction mechanism for the photocyclization of I is different between the deaerated and oxygen-saturated systems. Photocyclization reaction of I in the absence of oxygen takes place via the electronically excited triplet state of I, followed by the formation of the dihydrocarbazole. In the presence of oxygen, the dihydrocarbazole radical cation is suggested as an intermediate in the photocyclization.

IT 126717-23-5P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and photocyclization of tris(diphenylamino)benzene to give a bis(diphenylamino)carbazole derivative)

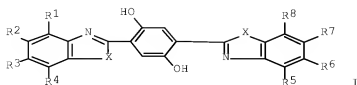
RN 126717-23-5 HCAPLUS
CN 1,3,5-Benzenetriamine, N1,N1,N3,N3,N5,N5-hexaphenyl- (CA INDEX NAME)



CC 27-11 (Heterocyclic Compounds (One Hetero Atom))
 Section cross-reference(s): 22
 IT 126717-23-5P
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation);
 RACT (Reactant or reagent)
 (preparation and photocyclization of tris(diphenylamino)benzene to
 give a bis(diphenylamino)carbazole derivative)
 REFERENCE COUNT: 11 THERE ARE 11 CITED REFERENCES AVAILABLE
 FOR THIS RECORD. ALL CITATIONS AVAILABLE
 IN THE RE FORMAT

L28 ANSWER 27 OF 55 HCAPLUS COPYRIGHT 2008 ACS on STN
 ACCESSION NUMBER: 1999:638521 HCAPLUS Full-text
 DOCUMENT NUMBER: 131:264582
 TITLE: Red-emitting organic electroluminescent device
 INVENTOR(S): Tanaka, Taizo; Toguchi, Itaru; Mori, Kenji
 PATENT ASSIGNEE(S): NEC Corp., Japan
 SOURCE: Jpn. Kokai Tokkyo Koho, 22 pp.
 CODEN: JKXXAF
 DOCUMENT TYPE: Patent
 LANGUAGE: Japanese
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 11273866	A	19991008	JP 1998-92224	199803 23
			<--	
JP 3092584	B2	20000925		
TW 415157	B	20001211	TW 1999-88104485	199903 22
			<--	
US 6630253	B1	20031007	US 1999-274963	199903 23
			<--	
PRIORITY APPLN. INFO.:			JP 1998-92224	A 199803 23
			<--	
OTHER SOURCE(S):		MARPAT 131:264582		
GI				



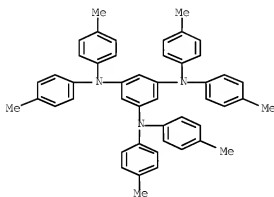
AB The invention relates to a red-emitting organic electroluminescent device, suited for use in making a flat light source and a display device, wherein the light-emitting layer comprises the compound represented by I [R1-8 = H, halo, OH, amino, etc.; two R's selected from R1-8 may be linked to form a ring; X = NH, O, and S].

IT 134257-64-0

RL: DEV (Device component use); USES (Uses)
(red-emitting organic electroluminescent device)

RN 134257-64-0 HCAPLUS

CN 1,3,5-Benzenetriamine, N1,N1,N3,N3,N5,N5-hexakis(4-methylphenyl)-
(CA INDEX NAME)



IC ICM H05B033-14
ICS C09K011-06; G09F009-30

CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

Section cross-reference(s): 74

IT 603-34-9 2085-33-8 4432-94-4 6940-30-3 14642-34-3
15546-43-7 24601-13-6 33450-09-8 33450-10-1 33450-11-2
123173-91-1 123847-85-8 134257-64-0 146162-54-1
157077-42-4 157077-43-5 194214-31-8 194794-43-9 221453-37-8
223735-62-4 227013-25-4 227013-26-5 227300-28-9 245041-41-2
245041-42-3 245041-43-4 245041-44-5 245041-45-6 245041-46-7
245041-47-8

RL: DEV (Device component use); USES (Uses)
(red-emitting organic electroluminescent device)

L28 ANSWER 28 OF 55 HCAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 1999:412898 HCAPLUS [Full-text](#)

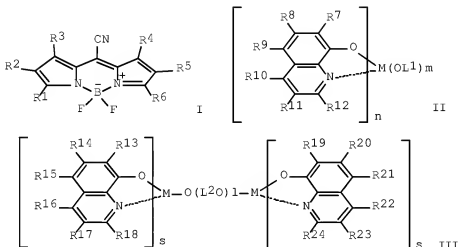
DOCUMENT NUMBER: 131:108713

TITLE: Organic electroluminescent device elements

INVENTOR(S): Suzuki, Toshiyasu; Tanaka, Taizo; Higashiguchi,

PATENT ASSIGNEE(S): Itaru; Oda, Atsushi
 SOURCE: NEC Corp., Japan
 Jpn. Kokai Tokkyo Koho, 23 pp.
 CODEN: JKXXAF
 DOCUMENT TYPE: Patent
 LANGUAGE: Japanese
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 11176572	A	19990702	JP 1997-337260	19971208
			<--	
JP 3011165	B2	20000221		
PRIORITY APPLN. INFO.:			JP 1997-337260	19971208
			<--	
OTHER SOURCE(S):		MARPAT 131:108713		
GI				



AB A phosphor of the elements comprises: a 5-cyanopromethane-BF₂ complex I; Ar1-3N; Ar1,2N₂NAr3,4; (NAr1,2) (NAr3,4) (NAr5,6) Z [Ar1-6 = (substituted) aromatic hydrocarbon, (substituted) aromatic heterocyclic; Z = trivalent (substituted) aromatic hydrocarbon, trivalent (substituted) aromatic heterocyclic; any two of Ar1-6 may form a ring]; II [L1 = (substituted) alkyl, (substituted) alkenyl, (substituted) cycloalkyl, (substituted) aromatic hydrocarbon, (substituted) aromatic heterocyclic; (substituted) aralkyl; n = 1-3; m = 0-2; M = (n+M) valent metal ion]; and/or III [R1-24 = H, halo, OH, (substituted) amino, nitro, cyano, (substituted) alkenyl, (substituted) cycloalkyl, (substituted) alkoxy, (substituted) aromatic hydrocarbon, (substituted) aromatic heterocyclic, (substituted) aralkyl, (substituted) aryloxy, (substituted) alkoxy carbonyl, carboxy; any two of R1-24 may form a ring; L2 =

(substituted) alkylene, (substituted) alkenylene; (substituted) cycloalkylene, (substituted) arylene, (substituted) aralkylene; l = 0, 1; s = 1, 2; M = (s + 1) valent metal ion].

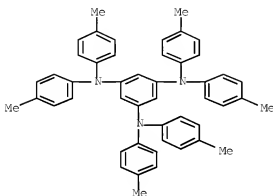
IT 134257-64-0

RL: PRP (Properties)

(organic electroluminescent device elements)

RN 134257-64-0 HCAPLUS

CN 1,3,5-Benzenetriamine, N1,N1,N3,N3,N5,N5-hexakis(4-methylphenyl)-
(CA INDEX NAME)



IC ICM H05B033-14

ICS C09K011-06

CC 73-5 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

IT 603-34-9, Triphenylamine 2085-33-8 4432-94-4 6940-30-3
14642-34-3 15546-43-7 21658-79-7 24601-13-6 123173-91-1
134257-64-0 146162-54-1 157077-42-4 157077-43-5
157410-23-6 194214-31-8 194794-43-9 214341-85-2 221453-37-8
223735-62-4 227013-25-4 227013-26-5 227300-28-9 230956-26-0
230956-27-1 230956-28-2 230956-29-3 230956-30-6 230956-31-7

RL: PRP (Properties)

(organic electroluminescent device elements)

L28 ANSWER 29 OF 55 HCAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 1999:341108 HCAPLUS [Full-text](#)

DOCUMENT NUMBER: 131:51819

TITLE: Organic electroluminescent device containing perylene compound

INVENTOR(S): Higashiguchi, Itaru; Oda, Atsushi; Suzuki, Toshiyasu; Tanaka, Taizo

PATENT ASSIGNEE(S): NEC Corp., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 26 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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JP 11144870	A	19990528	JP 1997-304207	

199711
06

<--

JP 3104223
PRIORITY APPLN. INFO.:

B2 20001030

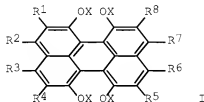
JP 1997-304207

199711
06

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OTHER SOURCE(S):
GI

MARPAT 131:51819



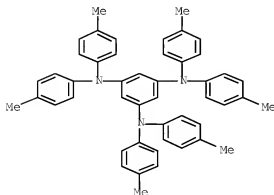
AB The device has a cathode and an anode sandwiching a light-emitting layer-containing organic thin film layer containing a perylene compound I (R1-8 = H, halogen, OH, NH2, NO2, cyano, alkyl, alkenyl, cycloalkyl, alkoxy, aromatic hydrocarbon, aromatic heterocyclic, aralkyl, aryloxy, alkoxy carbonyl, CO2H; R1-R8 may bond to form a ring; X = alkyl, alkenyl, cycloalkyl, aromatic hydrocarbon, aromatic heterocyclic, aralkyl). The device shows high luminance and high color purity.

IT 134257-64-0P

RL: DEV (Device component use); IMF (Industrial manufacture); MOA (Modifier or additive use); PREP (Preparation); USES (Uses)
(red-light-emitting electroluminescent device containing perylene compound)

RN 134257-64-0 HCAPLUS

CN 1,3,5-Benzenetriamine, N1,N1,N3,N3,N5,N5-hexakis(4-methylphenyl)-
(CA INDEX NAME)

IC ICM H05B033-14
ICS C09K011-06

CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related

Properties)

Section cross-reference(s): 24, 25, 74

IT 603-34-9P 2085-33-8P 4432-94-4P 6940-30-3P 14642-34-3P
15546-43-7P 24601-13-6P 123173-91-1P 123174-58-3P
134257-64-0P 146162-54-1P 157077-42-4P 157077-43-5P
194214-31-8P 194794-43-9P 214341-85-2P 221453-37-8P
223735-62-4P 227013-18-5P 227013-19-6P 227013-20-9P
227013-21-0P 227013-22-1P 227013-23-2P 227013-24-3P
227013-25-4P 227013-26-5P 227300-28-9P

RL: DEV (Device component use); IMF (Industrial manufacture); MOA
(Modifier or additive use); PREP (Preparation); USES (Uses)
(red-light-emitting electroluminescent device containing perylene
compound)

L28 ANSWER 30 OF 55 HCAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 1998:725916 HCAPLUS Full-text

DOCUMENT NUMBER: 130:66107

TITLE: Substituent effects on the electrochemical
oxidation of N,N',N''-triphenyl-1,3,5-
triaminobenzenes

AUTHOR(S): Glatzhofer, Daniel T.; Morvant, Mark C.

CORPORATE SOURCE: Department of Chemistry and Biochemistry and
Center for Electronic and Photonic Materials and
Devices, The University of Oklahoma, Norman, OK,
73019, USA

SOURCE: Journal of Physical Organic Chemistry (1998), 11(10), 731-736

CODEN: JPOCEE; ISSN: 0894-3230

PUBLISHER: John Wiley & Sons Ltd.

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Correlation anal. of the oxidation potentials of N,N',N''-triphenyl-1,3,5-triaminobenzenes (TPABs) substituted at the para positions of the outer Ph rings shows a linear free energy relation with resonance-enhanced substituent parameters (σ^+). Reaction parameters (p^+) for oxidation of TPABs are -1.53, -1.45, and -1.34 (per substituent) in CH₂Cl₂, MeCN and propylene carbonate resp. The resonance enhancement and small magnitude of the p^+ values are related to a significant but weak delocalization of charge onto the outer Ph rings in the MOs of radical cations resulting from the oxidation of TPABs. Data on the oxidation of p-substituted triphenylamines were treated similarly and gave a p^+ value of -3.27 (per substituent) in MeCN, greater than that for TPABs owing to a more significant delocalization of charge onto the Ph rings in the MOs of the corresponding radical cations. To demonstrate their predictive value, these linear free energy correlations were used to estimate the oxidation potentials of similarly substituted N,N',N',N'',N'',N''-hexaphenyl-1,3,5-triaminobenzenes, which are of interest as building blocks for mol. magnetic materials.

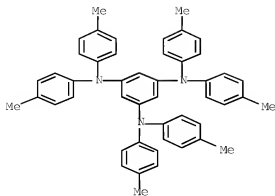
IT 165820-85-9

RL: FMU (Formation, unclassified); PRP (Properties); FORM
(Formation, nonpreparative)

(estimated reaction property for application to use in magnetic
materials; substituent effects on electrochem. oxidation of
N,N',N''-triphenyl-1,3,5-triaminobenzenes)

RN 165820-85-9 HCAPLUS

CN 1,3,5-Benzenetriamine, N,N,N',N',N'',N''-hexakis(4-methylphenyl)-,
radical ion(1+) (9CI) (CA INDEX NAME)



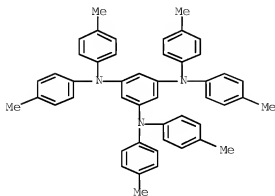
IT 134257-64-0

RL: PEP (Physical, engineering or chemical process); PRP (Properties); RCT (Reactant); PROC (Process); RACT (Reactant or reagent)

(estimated reaction property for application to use in magnetic materials; substituent effects on electrochem. oxidation of N,N',N''-triphenyl-1,3,5-triaminobenzenes)

RN 134257-64-0 HCAPLUS

CN 1,3,5-Benzenetriamine, N1,N1,N3,N3,N5,N5-hexakis(4-methylphenyl)-(CA INDEX NAME)



CC 22-7 (Physical Organic Chemistry)
Section cross-reference(s): 72, 77

IT 159506-66-8 165820-85-9 217638-12-5D, derivs.

RL: FMU (Formation, unclassified); PRP (Properties); FORM (Formation, nonpreparative)

(estimated reaction property for application to use in magnetic materials; substituent effects on electrochem. oxidation of N,N',N''-triphenyl-1,3,5-triaminobenzenes)

IT 108-72-5D, 1,3,5-Benzenetriamine, derivs. 126738-30-5
134257-64-0

RL: PEP (Physical, engineering or chemical process); PRP (Properties); RCT (Reactant); PROC (Process); RACT (Reactant or reagent)

(estimated reaction property for application to use in magnetic

materials; substituent effects on electrochem. oxidation of
N,N',N''-triphenyl-1,3,5-triaminobenzenes)

REFERENCE COUNT: 21 THERE ARE 21 CITED REFERENCES AVAILABLE
FOR THIS RECORD. ALL CITATIONS AVAILABLE
IN THE RE FORMAT

L28 ANSWER 31 OF 55 HCAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 1997:747525 HCAPLUS Full-text

DOCUMENT NUMBER: 128:75007

ORIGINAL REFERENCE NO.: 128:14671a,14674a

TITLE: Models for charged organic high-spin systems;
synthesis and cyclic voltammetry of one- and
two-dimensional diarylamino benzenes
AUTHOR(S): Yano, Masafumi; Furuichi, Mutsuo; Sato,
Kazunobu; Shiomi, Daisuke; Ichimura, Akio; Abe,
Kyo; Takui, Takeji; Itoh, Koichi
CORPORATE SOURCE: Department Chemistry, Faculty Science, Osaka
City University, Osaka, 558, Japan
SOURCE: Molecular Crystals and Liquid Crystals Science
and Technology, Section A: Molecular Crystals
and Liquid Crystals (1997), 306,
501-506

CODEN: MCLCE9; ISSN: 1058-725X

PUBLISHER: Gordon & Breach Science Publishers

DOCUMENT TYPE: Journal

LANGUAGE: English

OTHER SOURCE(S): CASREACT 128:75007

AB A series of 1,3-bis- (DABs) and 1,3,5-tris(diarylamino)benzenes (TABs) were
synthesized as model precursors for polycationic π -conjugated high-spin
systems. CV measurements at low temperature showed that the chemical
stability in solution of mono- and polycationic oxidation states of the
various DABs and TABs derivs. depend on their structures. Correlation between
the chemical stability of these cations and their mol. structure is discussed.

IT 126717-23-5P 126717-25-7P 134257-64-0P

177659-51-7P 177659-52-8P 189764-92-9P

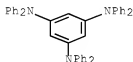
189764-93-0P 189764-95-2P

RL: PRP (Properties); SPN (Synthetic preparation); PREP
(Preparation)

(synthesis and cyclic voltammetry of one- and two-dimensional
diarylamino benzenes as models for charged organic high-spin systems)

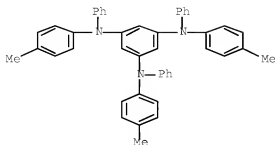
RN 126717-23-5 HCAPLUS

CN 1,3,5-Benzenetriamine, N1,N1,N3,N3,N5,N5-hexaphenyl- (CA INDEX
NAME)

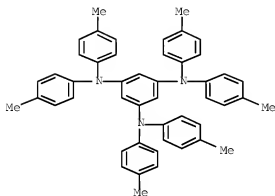


RN 126717-25-7 HCAPLUS

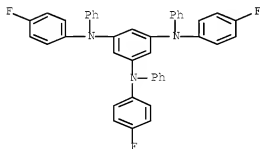
CN 1,3,5-Benzenetriamine, N1,N3,N5-tris(4-methylphenyl)-N1,N3,N5-
triphenyl- (CA INDEX NAME)



RN 134257-64-0 HCAPLUS

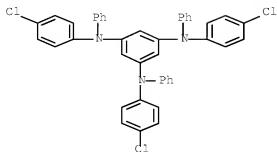
CN 1,3,5-Benzenetriamine, N1,N1,N3,N3,N5,N5-hexakis(4-methylphenyl)-
(CA INDEX NAME)

RN 177659-51-7 HCAPLUS

CN 1,3,5-Benzenetriamine, N1,N3,N5-tris(4-fluorophenyl)-N1,N3,N5-
triphenyl- (CA INDEX NAME)

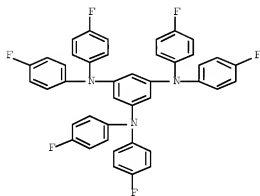
RN 177659-52-8 HCAPLUS

CN 1,3,5-Benzenetriamine, N1,N3,N5-tris(4-chlorophenyl)-N1,N3,N5-
triphenyl- (CA INDEX NAME)



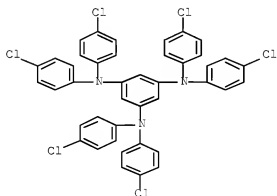
RN 189764-92-9 HCAPLUS

CN 1,3,5-Benzenetriamine, N1,N1,N3,N3,N5,N5-hexakis(4-fluorophenyl)-
(CA INDEX NAME)



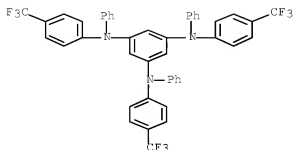
RN 189764-93-0 HCAPLUS

CN 1,3,5-Benzenetriamine, N1,N1,N3,N3,N5,N5-hexakis(4-chlorophenyl)-
(CA INDEX NAME)



RN 189764-95-2 HCAPLUS

CN 1,3,5-Benzenetriamine, N1,N3,N5-triphenyl-N1,N3,N5-tris[4-(trifluoromethyl)phenyl]-
(CA INDEX NAME)



CC 22-7 (Physical Organic Chemistry)
 IT 92899-33-7P 126717-23-5P 126717-25-7P
 126738-30-5P 127580-03-4P 134257-64-0P
 177659-51-7P 177659-52-8P 186494-37-1P
 186494-38-2P 186494-39-3P 186494-40-6P 186494-41-7P
 186494-42-8P 189764-91-8P 189764-92-9P
 189764-93-0P 189764-94-1P 189764-95-2P
 200728-88-7P 200728-89-8P 200728-90-1P 200728-91-2P
 200728-92-3P 200728-93-4P 200728-94-5P 200728-95-6P
 200728-96-7P 200728-97-8P
 RL: PRP (Properties); SPN (Synthetic preparation); PREP
 (Preparation)
 (synthesis and cyclic voltammetry of one- and two-dimensional
 diarylaminobenzenes as models for charged organic high-spin systems)
 REFERENCE COUNT: 12 THERE ARE 12 CITED REFERENCES AVAILABLE
 FOR THIS RECORD. ALL CITATIONS AVAILABLE
 IN THE RE FORMAT

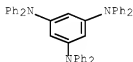
L28 ANSWER 32 OF 55 HCAPLUS COPYRIGHT 2008 ACS on STN
 ACCESSION NUMBER: 1997:249934 HCAPLUS Full-text
 DOCUMENT NUMBER: 126:343347
 ORIGINAL REFERENCE NO.: 126:66773a,66776a
 TITLE: Models for positive charge fluctuation vs. spin
 polarization in organic systems; synthesis and
 cyclic voltammetry of 2D and 1D hyperbranched
 π -aryl-based amines
 AUTHOR(S): Yano, M.; Furuichi, M.; Sato, K.; Shiomi, D.;
 Ichimura, A.; Abe, K.; Takui, T.; Itoh, K.
 CORPORATE SOURCE: Department of Chemistry, Faculty of Science,
 Osaka City University, Sumiyoshi-ku, Osaka, 558,
 Japan
 SOURCE: Synthetic Metals (1997), 85(1-3),
 1665-1666
 CODEN: SYMEDZ; ISSN: 0379-6779
 PUBLISHER: Elsevier
 DOCUMENT TYPE: Journal
 LANGUAGE: English
 GI

AB A series of substituted N,N,N',N',N'',N'''-hexaphenyl-1,3,5- benzenetriamine (TAB) I (R = H, Cl, F, Me, OMe; R1 = H, Cl, F, Me, OMe, CF3) and N,N,N',N'-tetraphenyl-1,3-benzenediamine (DAB) II (same R; R2 = H, Me) were synthesized as models for pos. charged fluctuation vs. spin polarization in organic systems. CV measurements at low temperature showed that the chemical stability-in-solution of mono and poly-cationic oxidation states of the various HPTABs and TPDABs derivs. depend on their mol. structures and substituents.

IT 126717-23-5 126717-25-7 134257-64-0
 177659-51-7 177659-52-8 189764-92-9
 189764-93-0 189764-95-2
 RL: PRP (Properties)
 (preparation of phenylbenzenetriamines and phenylbenzenediamines as pos. charge fluctuation and spin polarization models)

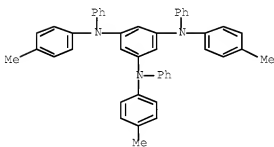
RN 126717-23-5 HCAPLUS

CN 1,3,5-Benzenetriamine, N1,N1,N3,N3,N5,N5-hexaphenyl- (CA INDEX NAME)



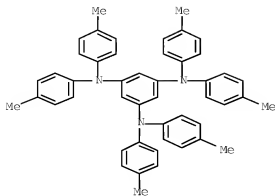
RN 126717-25-7 HCAPLUS

CN 1,3,5-Benzenetriamine, N1,N3,N5-tris(4-methylphenyl)-N1,N3,N5-triphenyl- (CA INDEX NAME)



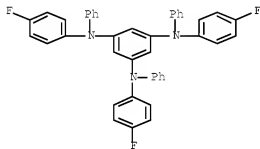
RN 134257-64-0 HCAPLUS

CN 1,3,5-Benzenetriamine, N1,N1,N3,N3,N5,N5-hexakis(4-methylphenyl)- (CA INDEX NAME)



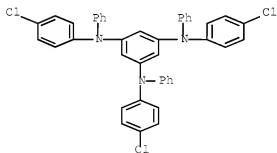
RN 177659-51-7 HCAPLUS

CN 1,3,5-Benzenetriamine, N1,N3,N5-tris(4-fluorophenyl)-N1,N3,N5-triphenyl- (CA INDEX NAME)



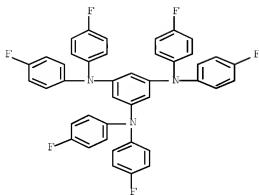
RN 177659-52-8 HCAPLUS

CN 1,3,5-Benzenetriamine, N1,N3,N5-tris(4-chlorophenyl)-N1,N3,N5-triphenyl- (CA INDEX NAME)



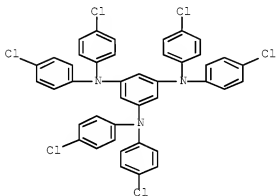
RN 189764-92-9 HCAPLUS

CN 1,3,5-Benzenetriamine, N1,N1,N3,N3,N5,N5-hexakis(4-fluorophenyl)- (CA INDEX NAME)



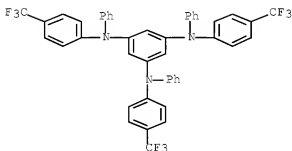
RN 189764-93-0 HCAPLUS

CN 1,3,5-Benzenetriamine, N1,N1,N3,N3,N5,N5-hexakis(4-chlorophenyl)-
(CA INDEX NAME)



RN 189764-95-2 HCAPLUS

CN 1,3,5-Benzenetriamine, N1,N3,N5-triphenyl-N1,N3,N5-tris[4-(trifluoromethyl)phenyl]-
(CA INDEX NAME)



CC 25-4 (Benzene, Its Derivatives, and Condensed Benzenoid Compounds)
Section cross-reference(s): 22

IT 126717-23-5 126717-25-7 134257-64-0

177659-51-7 177659-52-8 189764-91-8
189764-92-9 189764-93-0 189764-94-1
189764-95-2

RL: PRP (Properties)

(preparation of phenylbenzenetriamines and phenylbenzenediamines as pos. charge fluctuation and spin polarization models)

REFERENCE COUNT: 12 THERE ARE 12 CITED REFERENCES AVAILABLE
FOR THIS RECORD. ALL CITATIONS AVAILABLE
IN THE RE FORMAT

L28 ANSWER 33 OF 55 HCAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 1997:12764 HCAPLUS Full-text

DOCUMENT NUMBER: 126:52845

ORIGINAL REFERENCE NO.: 126:10286h,10287a

TITLE: Electrophotographic photoconductor using
indandione or ninhydrin derivatives as positive
hole-transporting agent

INVENTOR(S): Imanaka, Yukikatsu; Miyamoto, Eiichi

PATENT ASSIGNEE(S): Mita Industrial Co Ltd, Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 23 pp.

CODEN: JKXXAF

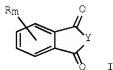
DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 08278642	A	19961022	JP 1995-84148	19950410
			<--	
PRIORITY APPLN. INFO.:			JP 1995-84148	19950410
			<--	
OTHER SOURCE(S):		MARPAT 126:52845		
GI				

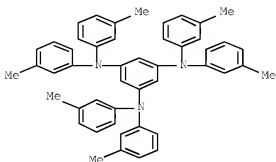


AB The photoconductor consists of successively laminated a charge-generating layer and a charge-transporting layer containing indandiones or ninhydrins I [Y = CH₂, C(OH)₂, CO; R = H, alkyl, aryl, alkoxy, halo; m = 1-4] as pos. hole-transporting agent. The charge-generating layer may contain bisazo, perylene, and/or phthalocyanine pigments. The photoconductor showing improved light resistance and stable changeability is applicable in repeating use.

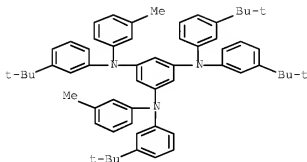
IT 168091-66-5 173436-45-8

RL: TEM (Technical or engineered material use); USES (Uses)
(charge-transporting agent; in electrophotog. photoconductor
using indandione or ninhydrin derivative as pos. hole-transporting

agent)
 RN 168091-66-5 HCAPLUS
 CN 1,3,5-Benzenetriamine, N1,N1,N3,N3,N5,N5-hexakis(3-methylphenyl)-
 (CA INDEX NAME)



RN 173436-45-8 HCAPLUS
 CN 1,3,5-Benzenetriamine, N1,N1,N3,N5-tetrakis[3-(1,1-dimethylethyl)phenyl]-N3,N5-bis(3-methylphenyl)- (CA INDEX NAME)



IC ICM G03G005-05
 ICS G03G005-06
 CC 74-3 (Radiation Chemistry, Photochemistry, and Photographic and
 Other Reprographic Processes)
 IT 65181-78-4 89114-90-9 105465-13-2 124235-73-0 124591-09-9
 132037-07-1 137133-15-4 142017-30-9 167377-22-2
 168091-66-5 173436-45-8 173923-39-2
 173923-43-8 173923-50-7 184865-77-8 184865-78-9
 RL: TEM (Technical or engineered material use); USES (Uses)
 (charge-transporting agent; in electrophotog. photoconductor
 using indandione or ninhydrin derivative as pos. hole-transporting
 agent)

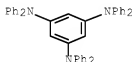
L28 ANSWER 34 OF 55 HCAPLUS COPYRIGHT 2008 ACS on STN
 ACCESSION NUMBER: 1996:306798 HCAPLUS [Full-text](#)
 DOCUMENT NUMBER: 125:86058
 ORIGINAL REFERENCE NO.: 125:16217a,16220a
 TITLE: Magnetic properties of 1,3,5-tris[bis(p-methoxyphenyl)amino]benzene cation radicals

AUTHOR(S): Yoshizawa, Kazunari; Hatanaka, Masahi; Ago, Hiroki; Tanaka, Kazuyoshi; Yamabe, Tokio
CORPORATE SOURCE: Sch. Eng., Kyoto Univ., Kyoto, 606-01, Japan
SOURCE: Bulletin of the Chemical Society of Japan (1996), 69(5), 1417-1422
CODEN: BCSJA8; ISSN: 0009-2673
PUBLISHER: Nippon Kagakkai
DOCUMENT TYPE: Journal
LANGUAGE: English

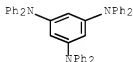
AB In order to pursue the possibility of charge-transfer organic ferromagnets, magnetic properties of the monocationic ClO₄⁻ and BF₄⁻ salts of 1,3,5-tris[bis(p-methoxyphenyl)amino]benzene (TBMAB) were characterized by means of ESR and a Faraday-type magnetic balance. MNDO-PM3 calcs. predicted 1,3,5-tris(diphenylamino)benzene (TDAB) dication and trication to be ground-state triplet and quartet, resp. Thus, these triaminobenzenes fulfill the necessary precondition for the appearance of intermol. ferromagnetic coupling based on McConnell's second model. Neg. Weiss consts. (-1 to 0 K) and low spin concns. (7-8%) were observed for TBMAB-ClO₄ and TBMAB-BF₄, although, according to this rule, intermol. ferromagnetic coupling is expected to occur for these systems.

IT 126717-23-5, 1,3,5-Benzenetriamine, N,N,N',N',N'',N'''-hexaphenyl- 140848-82-4, 1,3,5-Benzenetriamine, N,N,N',N',N'',N'''-hexaphenyl-, radical ion(3+) 158414-88-1, 1,3,5-Benzenetriamine, N,N,N',N',N'',N'''-hexaphenyl-, radical ion(1+) 178455-26-0
RL: PRP (Properties)
(structure and energy of)

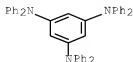
RN 126717-23-5 HCAPLUS
CN 1,3,5-Benzenetriamine, N1,N1,N3,N3,N5,N5-hexaphenyl- (CA INDEX NAME)



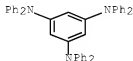
RN 140848-82-4 HCAPLUS
CN 1,3,5-Benzenetriamine, N,N,N',N',N'',N'''-hexaphenyl-, radical ion(3+) (9CI) (CA INDEX NAME)



RN 158414-88-1 HCAPLUS
CN 1,3,5-Benzenetriamine, N,N,N',N',N'',N'''-hexaphenyl-, radical ion(1+) (9CI) (CA INDEX NAME)



RN 178455-26-0 HCAPLUS
 CN 1,3,5-Benzenetriamine, N,N,N',N',N'',N'''-hexaphenyl-, radical
 ion(2+) (9CI) (CA INDEX NAME)



CC 22-10 (Physical Organic Chemistry)
 Section cross-reference(s): 77
 IT 126717-23-5, 1,3,5-Benzenetriamine, N,N,N',N',N'',N'''-
 hexaphenyl- 140848-82-4, 1,3,5-Benzenetriamine,
 N,N,N',N',N'',N'''-hexaphenyl-, radical ion(3+) 158414-88-1
 , 1,3,5-Benzenetriamine, N,N,N',N',N'',N'''-hexaphenyl-, radical
 ion(1+) 178455-26-0
 RL: PRP (Properties)
 (structure and energy of)

L28 ANSWER 35 OF 55 HCAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 1996:257410 HCAPLUS [Full-text](#)

DOCUMENT NUMBER: 125:19635

ORIGINAL REFERENCE NO.: 125:3819a,3822a

TITLE: Striking effects of halogen substituents on the
 glass-forming properties, glass-transition
 temperatures and stabilities of the glassy state
 of a new family of amorphous molecular
 materials, 1,3,5-tris(4-
 halogenophenylphenylamino)benzenes

AUTHOR(S): Kageyama, Hiroshi; Itano, Koji; Ishikawa,
 Wataru; Shirota, Yasuhiko

CORPORATE SOURCE: Dep. Appl. Chem., Osaka Univ., Osaka, 565, Japan

SOURCE: Journal of Materials Chemistry (1996),
 6(4), 675-6

CODEN: JMACEP; ISSN: 0959-9428

PUBLISHER: Royal Society of Chemistry

DOCUMENT TYPE: Journal

LANGUAGE: English

AB A new class of π -electron star-burst mols., 1,3,5-tris(4-
 halogenophenylphenylamino)benzenes, are synthesized for use as amorphous mol.
 materials. They readily form amorphous glasses, whereas the parent compound
 1,3,5-tris(diphenylamino)benzene instantly crystallizes; the ease of glass
 formation, glass-transition temperature, and stability of the glassy state are
 greatly affected by the type of halogen substituent.

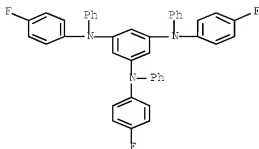
IT 177659-51-7 177659-52-8 177659-53-9

RL: PEP (Physical, engineering or chemical process); PRP
 (Properties); PROC (Process)

(glass formation, glass-transition temps. and stabilities of
 1,3,5-tris(4-halogenophenylphenylamino)benzene glasses)

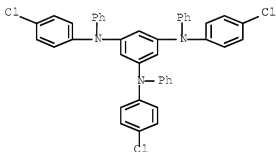
RN 177659-51-7 HCAPLUS

CN 1,3,5-Benzenetriamine, N1,N3,N5-tris(4-fluorophenyl)-N1,N3,N5-triphenyl- (CA INDEX NAME)



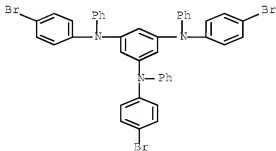
RN 177659-52-8 HCAPLUS

CN 1,3,5-Benzenetriamine, N1,N3,N5-tris(4-chlorophenyl)-N1,N3,N5-triphenyl- (CA INDEX NAME)



RN 177659-53-9 HCAPLUS

CN 1,3,5-Benzenetriamine, N1,N3,N5-tris(4-bromophenyl)-N1,N3,N5-triphenyl- (CA INDEX NAME)



CC 65-7 (General Physical Chemistry)

Section cross-reference(s): 69

IT 177659-51-7 177659-52-8 177659-53-9

RL: PEP (Physical, engineering or chemical process); PRP

(Properties); PROC (Process)

(glass formation, glass-transition temps. and stabilities of
1,3,5-tris(4-halogenophenylphenylamino)benzene glasses)

L28 ANSWER 36 OF 55 HCAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 1995:1006971 HCAPLUS Full-text

DOCUMENT NUMBER: 124:189451

ORIGINAL REFERENCE NO.: 124:34807a,34810a

TITLE: Laminated electrophotographic photoreceptor
containing diphenoquinone derivative and bisazo
pigment

INVENTOR(S): Miyamoto, Eiichi; Imanaka, Yukikatsu

PATENT ASSIGNEE(S): Mita Industrial Co Ltd, Japan

SOURCE: Jpn. Kokai Tokyo Koho, 25 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

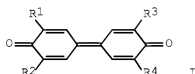
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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JP 07271069	A	19951020	JP 1994-64139	199403 31
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PRIORITY APPLN. INFO.:			JP 1994-64139	199403 31

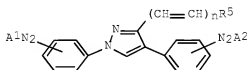
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OTHER SOURCE(S): MARPAT 124:189451

GI



I

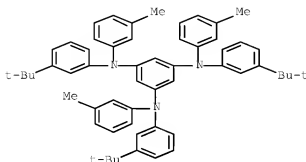


II

AB The photoreceptor has (A) a charge-transporting layer containing a hole-transporting agent, a diphenoquinone derivative I (R1-4 = H, alkyl, aryl, halo, NO2, CN, heterocycle) and optionally a charge-transporting agent NAr1Ar2Ar3 [Ar1-3 = (substituted) aryl] and (B) a charge-generating layer containing a bisazo pigment II [A1, A2 = coupler residue; R5 = H, (substituted) alkyl, aryl, heterocycle; n = 0, 1]. The photoreceptor shows improved repeatability.

IT 173723-10-9

RL: DEV (Device component use); USES (Uses)
 (charge-transporting agent; laminated electrophotog.
 photoreceptor containing diphenoquinone derivative and bisazo pigment)
 RN 173723-10-9 HCAPLUS
 CN 1,3,5-Benzenetriamine, N1,N3,N5-tris[3-(1,1-dimethylethyl)phenyl]-
 N1,N3,N5-tris(3-methylphenyl)- (CA INDEX NAME)



IC ICM G03G005-05
 ICS G03G005-06
 CC 74-3 (Radiation Chemistry, Photochemistry, and Photographic and
 Other Reprographic Processes)
 IT 20676-79-3 105465-13-2 106614-54-4 124591-09-9 167377-22-2
 167377-26-6 173723-10-9 173723-11-0
 RL: DEV (Device component use); USES (Uses)
 (charge-transporting agent; laminated electrophotog.
 photoreceptor containing diphenoquinone derivative and bisazo pigment)

L28 ANSWER 37 OF 55 HCAPLUS COPYRIGHT 2008 ACS on STN
 ACCESSION NUMBER: 1995:1006970 HCAPLUS [Full-text](#)
 DOCUMENT NUMBER: 124:160318
 ORIGINAL REFERENCE NO.: 124:29487a,29490a
 TITLE: Laminated electrophotographic photoreceptor
 containing hindered amine in charge-transporting
 layer
 INVENTOR(S): Myamoto, Eiichi; Imanaka, Yukikatsu
 PATENT ASSIGNEE(S): Mita Industrial Co Ltd, Japan
 SOURCE: Jpn. Kokai Tokkyo Koho, 26 pp.
 CODEN: JKXXAF
 DOCUMENT TYPE: Patent
 LANGUAGE: Japanese
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 07271068	A	19951020	JP 1994-64138	199403 31

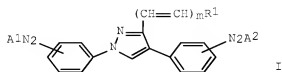
PRIORITY APPLN. INFO.: JP 1994-64138
 199403
 31

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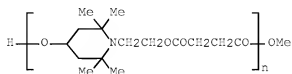
OTHER SOURCE(S):

MARPAT 124:160318

GI



I



II

AB The photoreceptor has (A) a charge-generating layer, preferably containing a bisazo pigment I [A1, A2 = coupler residue; R1 = H, (substituted) alkyl, aryl, heterocycle; m = 0, 1] and (B) a charge-transporting layer containing a hindered amine II (n = 10-20) and optionally a charge-transporting agent NAr1Ar2Ar3 [Ar1-3 = (substituted) aryl]. The photoreceptor shows improved repeatability.

IT 173436-45-8

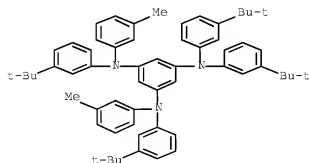
RL: DEV (Device component use); USES (Uses)

(charge-transporting agent; laminated electrophotog.

photoreceptor containing hindered amine in charge-transporting layer)

RN 173436-45-8 HCAPLUS

CN 1,3,5-Benzenetriamine, N1,N1,N3,N5-tetrakis[3-(1,1-dimethylethyl)phenyl]-N3,N5-bis(3-methylphenyl)- (CA INDEX NAME)



IC ICM G03G005-05

ICS G03G005-06

CC 74-3 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

IT 20676-79-3 105465-13-2 106614-54-4 124235-73-0 124591-08-8

124591-09-9 167377-22-2 167377-26-6 173436-45-8

RL: DEV (Device component use); USES (Uses)

(charge-transporting agent; laminated electrophotog.

photoreceptor containing hindered amine in charge-transporting layer)

L28 ANSWER 38 OF 55 HCAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 1995:948472 HCAPLUS [Full-text](#)

DOCUMENT NUMBER: 124:145515

ORIGINAL REFERENCE NO.: 124:27061a,27064a

TITLE: Syntheses and redox properties of di-, tri-, tetra-, and pentaamines

AUTHOR(S): Sasaki, Shigeru; Iyoda, Masahiko

CORPORATE SOURCE: Dep. Chem., Tokyo Metropolitan Univ., Hachioji, 192-03, Japan

SOURCE: Chemistry Letters (1995), (11), 1011-12

CODEN: CMLTAG; ISSN: 0366-7022

PUBLISHER: Nippon Kagakkai

DOCUMENT TYPE: Journal

LANGUAGE: English

OTHER SOURCE(S): CASREACT 124:145515

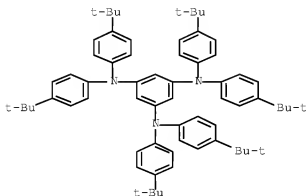
AB A series of di-, tri-, tetra-, and pentaamines were synthesized as precursors for corresponding di-, tri-, tetra-, and penta(aminiun radical-cations) by the aryl-N bond formation reaction between aryl iodides and in situ prepared copper amide in refluxing pyridine. Cyclic voltammograms of meta-connected derivs. consisted of irreversible waves which imply side reactions in addition to oxidation of aminium radical-cations.

IT 165820-83-7P

RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of)

RN 165820-83-7 HCAPLUS

CN 1,3,5-Benzenetriamine, N1,N1,N3,N3,N5,N5-hexakis[4-(1,1-dimethylethyl)phenyl]- (CA INDEX NAME)



CC 25-4 (Benzene, Its Derivatives, and Condensed Benzenoid Compounds)

IT 13050-56-1P 51545-35-8P 126738-30-5P 165820-83-7P

173314-10-8P 173314-11-9P 173314-12-0P 173314-13-1P

173314-14-2P

RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of)

L28 ANSWER 39 OF 55 HCAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 1995:943391 HCAPLUS [Full-text](#)

DOCUMENT NUMBER: 124:145314

ORIGINAL REFERENCE NO.: 124:27021a,27024a

TITLE: High-spin polycations of a triminobenzene

AUTHOR(S): Stickley, Kurt R.; Blackstock, Silac C.

CORPORATE SOURCE:

Department Chemistry, Vanderbilt University,
Nashville, TN, 37235, USA

SOURCE:

Molecular Crystals and Liquid Crystals Science
and Technology, Section A: Molecular Crystals
and Liquid Crystals (1995),
272(Proceedings of the Fourth International
Conference on Molecule-Based Magnets, 1994, Pt.
2), 303-7

CODEN: MCLCE9; ISSN: 1058-725X

PUBLISHER:

Gordon & Breach

DOCUMENT TYPE:

Journal

LANGUAGE:

English

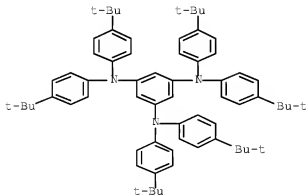
AB A symposium. Organic poly radical ions are mol. spin units which could be used in the construction of magnetic materials. They possess the feature of redox activation / deactivation, a potential means of reversibly controlling the mol. spin state of the unit, thus imparting a magnetic switch function. Here, we described the prospect of preparing tris(arylamines) suitably structured to yield long-lived cation, dication, and trication states of successively higher spin multiplicity. The preparation and oxidation of N,N,N',N'',N''',N'''-hexa-p-anisyl-1,3,5-triaminobenzene (HATAB) are discussed, along with the ESR spectra of the HATAB higher oxidation states. The HATAB²⁺ and HATAB³⁺ ESR signals are assigned to triplet and quartet states resp. which, on the basis of cursory Curie-Weiss data, are tentatively assigned as the ground states of these poly cations, consistent with calculational results (AM1/UHF) on the unsubstituted system, 1,3,5-triaminobenzene dication and trication.

IT 165820-84-8 165820-85-9

RL: FMU (Formation, unclassified); PRP (Properties); FORM
(Formation, nonpreparative)
(high-spin polycations of traminobenzene derivative)

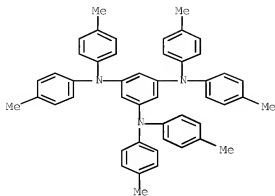
RN 165820-84-8 HCAPLUS

CN 1,3,5-Benzenetriamine, N,N,N',N'',N''',N'''-hexakis[4-(1,1-dimethylethyl)phenyl]-, radical ion(1+) (9CI) (CA INDEX NAME)



RN 165820-85-9 HCAPLUS

CN 1,3,5-Benzenetriamine, N,N,N',N'',N''',N'''-hexakis(4-methylphenyl)-, radical ion(1+) (9CI) (CA INDEX NAME)

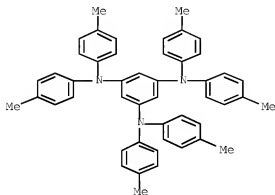


IT 134257-64-0 165820-83-7

RL: RCT (Reactant); RACT (Reactant or reagent)
(high-spin polycations of triminobenzene derivative)

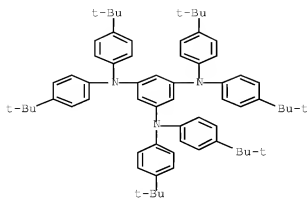
RN 134257-64-0 HCAPLUS

CN 1,3,5-Benzenetriamine, N1,N1,N3,N3,N5,N5-hexakis(4-methylphenyl)-
(CA INDEX NAME)



RN 165820-83-7 HCAPLUS

CN 1,3,5-Benzenetriamine, N1,N1,N3,N3,N5,N5-hexakis[4-(1,1-dimethylethyl)phenyl]- (CA INDEX NAME)

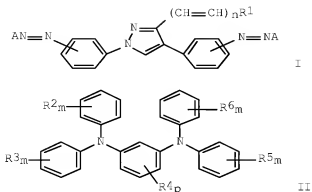


CC 22-13 (Physical Organic Chemistry)
 Section cross-reference(s): 77
 IT 159506-66-8 159573-71-4 159573-72-5 165820-84-8
 165820-85-9 165820-86-0
 RL: FMU (Formation, unclassified); PRP (Properties); FORM
 (Formation, nonpreparative)
 (high-spin polycations of triminobenzene derivative)
 IT 696-62-8, 4-Iodoanisole 35787-71-4 104216-56-0
 134257-64-0 165820-81-5 165820-83-7
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (high-spin polycations of triminobenzene derivative)

L28 ANSWER 40 OF 55 HCAPLUS COPYRIGHT 2008 ACS on STN
 ACCESSION NUMBER: 1995:746414 HCAPLUS [Full-text](#)
 DOCUMENT NUMBER: 123:213115
 ORIGINAL REFERENCE NO.: 123:37701a, 37704a
 TITLE: Electrophotographic photoreceptors containing
 bisazo pigment
 INVENTOR(S): Myamoto, Eiichi; Sumita, Keisuke; Iwasaki,
 Hiroaki; Oki, Tsuneo
 PATENT ASSIGNEE(S): Mita Industrial Co Ltd, Japan
 SOURCE: Jpn. Kokai Tokkyo Koho, 24 pp.
 CODEN: JKXXAF
 DOCUMENT TYPE: Patent
 LANGUAGE: Japanese
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 07120948	A	19950512	JP 1992-159311	19920618
			<--	
JP 3079293	B2	20000821		
PRIORITY APPLN. INFO.:			JP 1992-159311	19920618
			<--	

GI



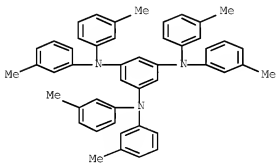
AB The photoreceptors comprise a conductive substrate coated with a photosensitive layer containing a bisazo pigment I [A = coupler residue; R1 = H, (substituted) alkyl, (substituted) aryl, (substituted) heterocycle; n = 0, 1] as a charge-generating material and a phenylenediamine derivative II [R2-6 = alkyl, alkoxy, halo, (N-substituted) amino, aryl, nitro, cyano; m = 0-5; p = 0-4] as a charge-transporting material. The photoreceptors show improved electrophotog. properties.

IT 168091-66-5

RL: DEV (Device component use); USES (Uses)
(electrophotog. photoreceptor charge-transporting agent)

RN 168091-66-5 HCAPLUS

CN 1,3,5-Benzenetriamine, N1,N1,N3,N3,N5,N5-hexakis(3-methylphenyl)-
(CA INDEX NAME)



IC ICM G03G005-06
ICS G03G005-06

CC 74-3 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

IT 124591-08-8 124591-09-9 132037-07-1 142017-30-9 142017-33-2
156202-96-9 168091-64-3 168091-65-4 168091-66-5
168091-67-6

RL: DEV (Device component use); USES (Uses)
(electrophotog. photoreceptor charge-transporting agent)

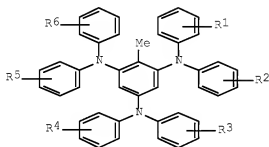
L28 ANSWER 41 OF 55 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 1995:636338 HCAPLUS [Full-text](#)

DOCUMENT NUMBER: 123:156360
 ORIGINAL REFERENCE NO.: 123:27607a, 27610a
 TITLE: Electrophotographic photoreceptors using triamine compound as charge-transporting agent
 INVENTOR(S): Nakamura, Yoichi; Kazama, Toyoki
 PATENT ASSIGNEE(S): Fuji Electric Co Ltd, Japan
 SOURCE: Jpn. Kokai Tokkyo Koho, 6 pp.
 CODEN: JKXXAF
 DOCUMENT TYPE: Patent
 LANGUAGE: Japanese
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 07084383	A	19950331	JP 1993-232113	19930920

PRIORITY APPLN. INFO.: JP 1993-232113
 19930920

GI



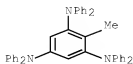
AB The photoreceptors comprise a conductive substrate laminated with a photosensitive layer containing ≥ 1 triamine compound I (R1-6 = H, alkyl, alkoxy) as a charge-transporting agent. The photoreceptors show high photosensitivity and improved cyclicability. Thus, an Al-evaporated polyester film was coated with a charge-generating layer containing X-type metal-free phthalocyanine and with a charge-transporting layer containing I (R1-6 = H) to give a photoreceptor.

IT 167022-36-8 167022-37-9

RL: DEV (Device component use); PRP (Properties); USES (Uses)
 (electrophotog. photoreceptors containing benzenetriamines as charge transporters)

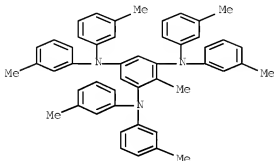
RN 167022-36-8 HCAPLUS

CN 1,3,5-Benzenetriamine, 2-methyl-N1,N1,N3,N3,N5,N5-hexaphenyl- (CA INDEX NAME)



RN 167022-37-9 HCAPLUS

CN 1,3,5-Benzenetriamine, 2-methyl-N1,N1,N3,N3,N5,N5-hexakis(3-methylphenyl)- (CA INDEX NAME)



IC ICM G03G005-06

CC 74-3 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

IT 167022-36-8 167022-37-9

RL: DEV (Device component use); PRP (Properties); USES (Uses)
(electrophotog. photoreceptors containing benzenetriamines as charge transporters)

L28 ANSWER 42 OF 55 HCAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 1995:531024 HCAPLUS Full-text

DOCUMENT NUMBER: 124:29036

ORIGINAL REFERENCE NO.: 124:5579a,5582a

TITLE: Molecular orbital study on cationic states of triphenylene and 1,3,5-

tris(diphenylamino)benzene as a design of

charge-transfer organic ferromagnets

AUTHOR(S): Yoshizawa, Kazunari; Hatanaka, Masashi; Tanaka, Kazuyoshi; Yamabe, Tokio

CORPORATE SOURCE: Inst. for Fundamental Chemistry, Kyoto, 606, Japan

SOURCE: Synthetic Metals (1995), 71(1-3), 1829-30

CODEN: SYMEDZ; ISSN: 0379-6779

PUBLISHER: Elsevier

DOCUMENT TYPE: Journal

LANGUAGE: English

AB For the design of charge-transfer organic ferromagnets, the electronic structures of the neutral and mono-, di- and tricationic states of triphenylene and 1,3,5-tris(diphenylamino)benzene (TDAB) are studied by the PM3-MO method. The high-spin states of the di- and trications of TDAB lie below the corresponding low-spin states.

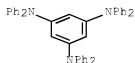
IT 126717-23-5, 1,3,5-Tris(diphenylamino)benzene
158414-88-1 171675-14-2 171746-15-9

RL: PRP (Properties)

(electronic structure of)

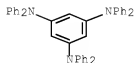
RN 126717-23-5 HCAPLUS

CN 1,3,5-Benzenetriamine, N1,N1,N3,N3,N5,N5-hexaphenyl- (CA INDEX NAME)



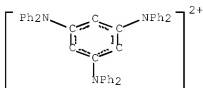
RN 158414-88-1 HCAPLUS

CN 1,3,5-Benzenetriamine, N,N,N',N',N'',N''-hexaphenyl-, radical ion(1+) (9CI) (CA INDEX NAME)



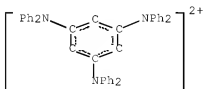
RN 171675-14-2 HCAPLUS

CN Cyclohexadienediylum, 1,3,5-tris(diphenylamino)- (9CI) (CA INDEX NAME)



RN 171746-15-9 HCAPLUS

CN Cyclohexadienediylum, 1,3,5-tris(diphenylamino)-, radical ion(1+) (9CI) (CA INDEX NAME)



CC 22-2 (Physical Organic Chemistry)

Section cross-reference(s): 77

IT 217-59-4, Triphenylene 34507-32-9, Triphenylene monocation
126717-23-5, 1,3,5-Tris(diphenylamino)benzene 138878-64-5,

Triphenylene dication 158414-88-1 171675-13-1,
Triphenylene trication 171675-14-2 171746-15-9
RL: PRP (Properties)
(electronic structure of)

L28 ANSWER 43 OF 55 HCAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 1995:439876 HCAPLUS [Full-text](#)

DOCUMENT NUMBER: 123:111466

ORIGINAL REFERENCE NO.: 123:19901a,19904a

TITLE: Cation radicals of 1,3,5-
tris(diarylamino)benzenes

AUTHOR(S): Stickley, Kurt R.; Blackstock, Silas C.

CORPORATE SOURCE: Department of Chemistry, Vanderbilt Univ.,
Nashville, TN, 37235, USA

SOURCE: Tetrahedron Letters (1995), 36(10),
1585-8

CODEN: TELEAY; ISSN: 0040-4039

PUBLISHER: Elsevier

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Cyclic voltammetry and ESR reveal the nature of the cation radicals of some
1,3,5-tris(diarylamino)benzenes. Results show effectively delocalized radical
cations with long solution lifetimes in cold media but with much less kinetic
stability at ambient temperature than their monomeric triarylammonium cation
radical counterparts. Intramol. ortho coupling, perhaps via
disproportionation, is a postulated cation radical decay mode.

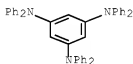
IT 126717-23-5P, 1,3,5-Benzenetriamine, N,N,N',N',N'',N'''-
hexaphenyl 134257-64-0P, 1,3,5-Benzenetriamine,
N,N,N',N',N'',N'''-hexakis(4-methylphenyl) 165820-82-6P
165820-83-7P 165820-84-8P 165820-85-9P
165905-29-3P 165967-01-1P

RL: PRP (Properties); SPN (Synthetic preparation); PREP
(Preparation)

(preparation and properties of aryl-1,3,5-benzenetriamine radical
cations)

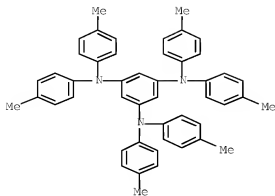
RN 126717-23-5 HCAPLUS

CN 1,3,5-Benzenetriamine, N1,N1,N3,N3,N5,N5-hexaphenyl- (CA INDEX
NAME)



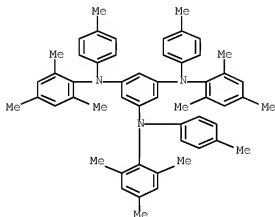
RN 134257-64-0 HCAPLUS

CN 1,3,5-Benzenetriamine, N1,N1,N3,N3,N5,N5-hexakis(4-methylphenyl)-
(CA INDEX NAME)



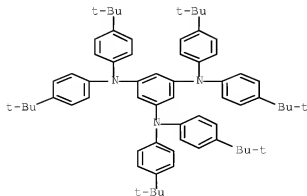
RN 165820-82-6 HCAPLUS

CN 1,3,5-Benzenetriamine, N1,N3,N5-tris(4-methylphenyl)-N1,N3,N5-tris(2,4,6-trimethylphenyl)- (CA INDEX NAME)



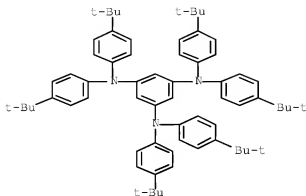
RN 165820-83-7 HCAPLUS

CN 1,3,5-Benzenetriamine, N1,N1,N3,N3,N5,N5-hexakis[4-(1,1-dimethylethyl)phenyl]- (CA INDEX NAME)



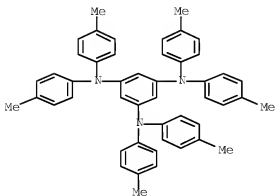
RN 165820-84-8 HCAPLUS

CN 1,3,5-Benzenetriamine, N,N,N',N',N'',N''-hexakis[4-(1,1-dimethylethyl)phenyl]-, radical ion(1+) (9CI) (CA INDEX NAME)



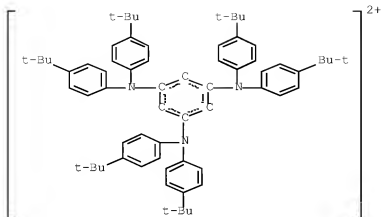
RN 165820-85-9 HCAPLUS

CN 1,3,5-Benzenetriamine, N,N,N',N',N'',N''-hexakis(4-methylphenyl)-, radical ion(1+) (9CI) (CA INDEX NAME)

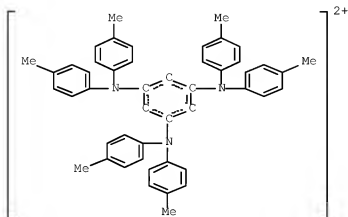


RN 165905-29-3 HCAPLUS

CN Cyclohexadienediylum, 1,3,5-tris[bis[4-(1,1-dimethylethyl)phenyl]amino]- (9CI) (CA INDEX NAME)



RN 165967-01-1 HCAPLUS

CN Cyclohexadienediylum, 1,3,5-tris[bis(4-methylphenyl)amino]- (9CI)
(CA INDEX NAME)

CC 22-10 (Physical Organic Chemistry)

Section cross-reference(s): 25, 72

IT 126717-23-5P, 1,3,5-Benzenetriamine, N,N,N',N',N'',N'''-hexaphenyl 126738-30-5P, 1,3,5-Benzenetriamine, N,N,N',N',N'',N'''-hexakis(4-methoxyphenyl) 134257-64-0P, 1,3,5-Benzenetriamine, N,N,N',N',N'',N'''-hexakis(4-methylphenyl) 159506-66-8P, 1,3,5-Benzenetriamine, N,N,N',N',N'',N'''-hexakis(4-methoxyphenyl), radical ion(1+) 159573-71-4P 165820-81-5P 165820-82-6P 165820-83-7P 165820-84-8P 165820-85-9P 165820-86-0P 165905-29-3P 165967-01-1P

RL: FRP (Properties); SPN (Synthetic preparation); PREP
(Preparation)

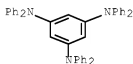
(preparation and properties of aryl-1,3,5-benzenetriamine radical cations)

L28 ANSWER 44 OF 55 HCAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 1995:198957 HCAPLUS [Full-text](#)

DOCUMENT NUMBER: 122:30837

ORIGINAL REFERENCE NO.: 122:6091a,6094a
TITLE: Triplet Dication and Quartet Trication of a Triaminobenzene
AUTHOR(S): Stickley, Kurt R.; Blackstock, Silas C.
CORPORATE SOURCE: Department of Chemistry, Vanderbilt University, Nashville, TN, 37235, USA
SOURCE: Journal of the American Chemical Society (1994), 116(25), 11576-7
CODEN: JACSAT; ISSN: 0002-7863
PUBLISHER: American Chemical Society
DOCUMENT TYPE: Journal
LANGUAGE: English
AB 1,3,5-Tris(di-p-anisylamino)benzene is shown to possess solution-stable cation, dication, and trication oxidation states at low temperature. The di- and trication structures are ground-state triplet and quartet mols., resp.
IT 159506-65-7P
RL: PNU (Preparation, unclassified); PRP (Properties); PREP (Preparation) (formation and ESR of)
RN 159506-65-7 HCAPLUS
CN 1,3,5-Benzenetriamine, N,N,N',N',N'',N'''-hexaphenyl-, radical ion(1+), dimer (9CI) (CA INDEX NAME)
CM 1
CRN 158414-88-1
CMF C42 H33 N3
CCI RIS



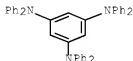
CC 22-7 (Physical Organic Chemistry)
IT 159506-65-7P 159506-66-8P, 1,3,5-Tris(di-p-anisylamino)benzene cation radical
RL: PNU (Preparation, unclassified); PRP (Properties); PREP (Preparation) (formation and ESR of)
L28 ANSWER 45 OF 55 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 1994:700714 HCAPLUS [Full-text](#)
DOCUMENT NUMBER: 121:300714
ORIGINAL REFERENCE NO.: 121:55045a,55048a
TITLE: Photocyclization reaction of 1,3,5-tris(diphenylamino)benzene
AUTHOR(S): Yoshikawa, Satoru; Kotani, Yoshiko; Shiota, Yasuhiko
CORPORATE SOURCE: Faculty of Engineering, Osaka University, Suita, 565, Japan
SOURCE: Journal of Photopolymer Science and Technology (1994), 7(1), 83-4
CODEN: JSTEWW; ISSN: 0914-9244
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Direct irradiation of a C6H6 solution of the title compound with light of wavelength >313 nm for 20 h under constant bubbling of O2 gave 70% 2,4-bis(diphenylamino)-N-phenylcarbazole. The reaction proceeded via the excited triplet state of the starting compound

IT 126717-23-5P, 1,3,5-Tris(diphenylamino)benzene
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(photocyclization reaction of tris(diphenylamino)benzene)

RN 126717-23-5 HCAPLUS

CN 1,3,5-Benzenetriamine, N1,N1,N3,N3,N5,N5-hexaphenyl- (CA INDEX NAME)



CC 27-11 (Heterocyclic Compounds (One Hetero Atom))
Section cross-reference(s): 22

IT 126717-23-5P, 1,3,5-Tris(diphenylamino)benzene
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(photocyclization reaction of tris(diphenylamino)benzene)

L28 ANSWER 46 OF 55 HCAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 1994:640557 HCAPLUS [Full-text](#)

DOCUMENT NUMBER: 121:240557

ORIGINAL REFERENCE NO.: 121:43685a,43688a

TITLE: Electrochemical oxidation of 1,3,5-tris(diphenylamino)benzene (TDAB) for polyradical material

AUTHOR(S): Yoshizawa, Kazunari; Ito, Akihiro; Tanaka, Kazuyoshi; Yamabe, Tokio

CORPORATE SOURCE: Division of Molecular Engineering, Faculty of Engineering, Kyoto University, Sakyo-ku, Kyoto, 606-01, Japan

SOURCE: Synthetic Metals (1994), 66(1), 81-3

CODEN: SYMEDZ; ISSN: 0379-6779

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Electrochem. coupling of 1,3,5-tris(diphenylamino)benzene (TDAB) occurs in dichloromethane or trichloroethane solution in the presence of tetrabutylammonium tetrafluoroborate or perchlorate. The obtained material contains radical cations, the spin concentration of which is of the order 10¹⁹ g⁻¹. An anodic reaction pathway of TDAB is proposed from the dimerization mechanism of the triphenylaminium radical cation.

IT 158414-89-2P, 1,3,5-Tris(diphenylamino)benzene radical

ion(1+) tetrafluoroborate(1-)

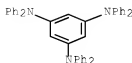
RL: PEP (Physical, engineering or chemical process); PNU (Preparation, unclassified); PRP (Properties); RCT (Reactant); PREP (Preparation); PROC (Process); RACT (Reactant or reagent)

(electrochem. formation and IR spectrum and spin concns. of)

RN 158414-89-2 HCAPLUS

CN 1,3,5-Benzenetriamine, N,N,N',N',N'',N''-hexaphenyl-, radical ion(1+), tetrafluoroborate(1-) (9CI) (CA INDEX NAME)

CRN 158414-88-1
 CMF C42 H33 N3
 CCI RIS

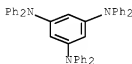


CM 2

CRN 14874-70-5
 CMF B F4
 CCI CCS



IT 126717-23-5, 1,3,5-Tris(diphenylamino)benzene
 RL: PEP (Physical, engineering or chemical process); PRP
 (Properties); RCT (Reactant); PROC (Process); RACT (Reactant or
 reagent)
 (electrochem. oxidation for polyradical material)
 RN 126717-23-5 HCAPLUS
 CN 1,3,5-Benzenetriamine, N1,N1,N3,N3,N5,N5-hexaphenyl- (CA INDEX
 NAME)



CC 72-2 (Electrochemistry)
 Section cross-reference(s): 22, 35
 IT 158414-89-2P, 1,3,5-Tris(diphenylamino)benzene radical
 ion(1+) tetrafluoroborate(1-) 158414-90-5P, 1,3,5-
 Tris(diphenylamino)benzene radical ion(1+) perchlorate
 RL: PEP (Physical, engineering or chemical process); PNU
 (Preparation, unclassified); PRP (Properties); RCT (Reactant); PREP
 (Preparation); PROC (Process); RACT (Reactant or reagent)
 (electrochem. formation and IR spectrum and spin concns. of)
 IT 126717-23-5, 1,3,5-Tris(diphenylamino)benzene
 RL: PEP (Physical, engineering or chemical process); PRP
 (Properties); RCT (Reactant); PROC (Process); RACT (Reactant or
 reagent)
 (electrochem. oxidation for polyradical material)

L28 ANSWER 47 OF 55 HCAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 1994:30300 HCAPLUS [Full-text](#)

DOCUMENT NUMBER: 120:30300

ORIGINAL REFERENCE NO.: 120:5709a,5712a

TITLE: Molecular orbital study on quartet molecules with trigonal axis of symmetry

AUTHOR(S): Yoshizawa, Kazunari; Hatanaka, Masashi; Ito, Akihiro; Tanaka, Kazuyoshi; Yamabe, Tokio

CORPORATE SOURCE: Fac. Eng., Kyoto Univ., Kyoto, 606-01, Japan
SOURCE: Molecular Crystals and Liquid Crystals Science and Technology, Section A: Molecular Crystals and Liquid Crystals (1993), 232, 323-32

CODEN: MCLCE9; ISSN: 1058-725X

DOCUMENT TYPE: Journal

LANGUAGE: English

AB The ESR spectrum of the randomly oriented cationic triradical of 1,3,5-tris(diphenylamino)benzene (TDAB) is shown to agree well with the theor. prediction of a quartet ($S = 3/2$) mol. The electronic structures of non-Kekule-type isoelectronic mol. 1,3,5-trimethylenebenzene (TMB) and 1,3,5-triaminobenzene trication (TAB³⁺) are discussed by means of the ab initio MO (MO) method in the UHF scheme. In TMB the quartet state with planar D_{3h} also lies 16.9 kcal/mol below the lowest doublet state with an orthogonal geometry where one of the amino groups is twisted out of the mol. plane. These quartet ground states result from the nearly threefold-degenerate orbitals consisting of the nonbonding MOs. In addition, the quartet-doublet splitting energy of TDAB is investigated using the semiempirical AM1 method.

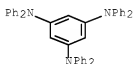
IT 140848-82-4, 1,3,5-Tris(diphenylamino)benzene triradical trication

RL: PRP (Properties)

(ESR and quartet ground state structure and conformation of, MO calcn. of)

RN 140848-82-4 HCAPLUS

CN 1,3,5-Benzenetriamine, N,N,N',N',N'',N''-hexaphenyl-, radical ion(3+) (9CI) (CA INDEX NAME)



CC 22-3 (Physical Organic Chemistry)

Section cross-reference(s): 77

IT 140848-82-4, 1,3,5-Tris(diphenylamino)benzene triradical trication

RL: PRP (Properties)

(ESR and quartet ground state structure and conformation of, MO calcn. of)

L28 ANSWER 48 OF 55 HCAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 1993:682630 HCAPLUS [Full-text](#)

DOCUMENT NUMBER: 119:282630

ORIGINAL REFERENCE NO.: 119:50375a,50378a

TITLE: Polymorphism of starburst molecules: methyl-substituted derivatives of 1,3,5-tris(diphenylamino)benzene

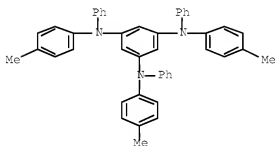
AUTHOR(S): Ishikawa, Wataru; Inada, Hiroshi; Nakano, Hideyuki; Shiota, Yasuhiko
CORPORATE SOURCE: Fac. Eng., Osaka Univ., Suita, 565, Japan
SOURCE: Journal of Physics D: Applied Physics (1993), 26(8B), B94-B99
CODEN: JPAPBE; ISSN: 0022-3727
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Starburst mols. based on π -electron systems for making amorphous mol. materials, 1,3,5-tris(2-methylphenylphenylamino)benzene and 1,3,5-tris(4-methylphenylphenylamino)benzene, show polymorphism depending upon the history of heat treatment which involves crystallization via amorphous glasses as characterized by differential scanning calorimetry, x-ray diffraction, and polarizing microscopy.

IT 126717-25-7, 1,3,5-Tris(4-methylphenylphenylamino)benzene
142143-88-2, 1,3,5-Tris(2-methylphenylphenylamino)benzene
RL: PROC (Process)
(polymorphism of starburst mols.)

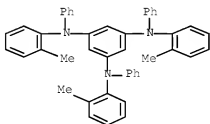
RN 126717-25-7 HCAPLUS

CN 1,3,5-Benzenetriamine, N1,N3,N5-tris(4-methylphenyl)-N1,N3,N5-triphenyl- (CA INDEX NAME)



RN 142143-88-2 HCAPLUS

CN 1,3,5-Benzenetriamine, N1,N3,N5-tris(2-methylphenyl)-N1,N3,N5-triphenyl- (CA INDEX NAME)

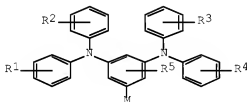


CC 75-7 (Crystallography and Liquid Crystals)

IT 126717-25-7, 1,3,5-Tris(4-methylphenylphenylamino)benzene
142143-88-2, 1,3,5-Tris(2-methylphenylphenylamino)benzene
RL: PROC (Process)
(polymorphism of starburst mols.)

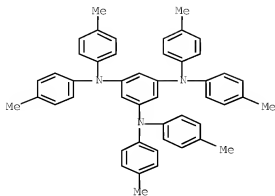
ACCESSION NUMBER: 1992:601533 HCAPLUS Full-text
 DOCUMENT NUMBER: 117:201533
 ORIGINAL REFERENCE NO.: 117:34613a,34616a
 TITLE: Organic thin-film electroluminescent element
 INVENTOR(S): Takahara, Shigeru; Fukuda, Nobuhiro; Ohashi, Yutaka
 PATENT ASSIGNEE(S): Mitsui Toatsu Chemicals, Inc., Japan
 SOURCE: Jpn. Kokai Tokkyo Koho, 8 pp.
 CODEN: JKXXAF
 DOCUMENT TYPE: Patent
 LANGUAGE: Japanese
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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JP 04126790	A	19920427	JP 1990-247161	19900919
			<--	
PRIORITY APPLN. INFO.:			JP 1990-247161	19900919
			<--	
OTHER SOURCE(S):		MARPAT 117:201533		
GI				



I

AB The element comprises a pair of transparent electrode layers (1) sandwiching a laminate of a hole-transport (2) and a phosphor (3) layer, wherein (2) contains a m-phenylenediamine derivative I {R1-5=H, (un)substituted-alkyl, -alkoxyl, -halo; M = H, alkyl, alkoxy, halo, [R6(C6H4)] [R7(C6H4)]N; R6,7 = H, (un)substituted-alkyl, -alkoxyl, -halo}. The element provides a stable long-life backlight for liquid display devices.
 IT 134257-64-0
 RL: USES (Uses)
 (organic thin-film electroluminescent elements from, as hole transporter)
 RN 134257-64-0 HCAPLUS
 CN 1,3,5-Benzenetriamine, N1,N1,N3,N3,N5,N5-hexakis(4-methylphenyl)-(CA INDEX NAME)



IC ICM C09K011-06
 CCS H01L033-00; H05B033-14
 CC 73-10 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
 Section cross-reference(s): 25
 IT 92899-33-7 134257-64-0
 RL: USES (Uses)
 (organic thin-film electroluminescent elements from, as hole transporter)

L28 ANSWER 50 OF 55 HCAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 1992:447799 HCAPLUS Full-text

DOCUMENT NUMBER: 117:47799

ORIGINAL REFERENCE NO.: 117:8503a,8506a

TITLE: ESR of the cationic triradical of 1,3,5-tris(diphenylamino)benzene

AUTHOR(S): Yoshizawa, Kazunari; Chano, Akihisa; Ito, Akihiro; Tanaka, Kazuyoshi; Yamabe, Tokio; Fujita, Hideo; Yamauchi, Jun; Shiro, Motoo
 CORPORATE SOURCE: Fac. Eng., Kyoto Univ., Kyoto, 606-01, Japan
 SOURCE: Journal of the American Chemical Society (1992), 114(15), 5994-8

CODEN: JACSAT; ISSN: 0002-7863

DOCUMENT TYPE: Journal

LANGUAGE: English

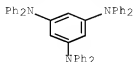
AB The ESR spectrum of the title species is discussed. The tricationic state was observed by cyclic voltammetry. The orange cationic triradical was prepared by oxidation with trifluoroacetic anhydride in the presence of tetrabutylammonium tetrafluoroborate in CH₂Cl₂. The ESR spectrum of the randomly oriented radicals in CH₂Cl₂ glass agrees well with the theoretical prediction of a quartet ($S = 3/2$) spin state with a zero-field splitting parameter D' of 13.1 G (0.0012 cm⁻¹). This is the first observation of a high spin state of a cationic radical.

IT 140848-82-4P

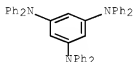
RL: PRP (Properties); FORM (Formation, nonpreparative); PREP (Preparation)
 (formation and ESR of)

RN 140848-82-4 HCAPLUS

CN 1,3,5-Benzenetriamine, N,N,N',N',N'',N'''-hexaphenyl-, radical ion(3+) (9CI) (CA INDEX NAME)



IT 126717-23-5P
 RL: SPN (Synthetic preparation); PREP (Preparation)
 (preparation, x-ray anal., and cyclic voltammetry of)
 RN 126717-23-5 HCAPLUS
 CN 1,3,5-Benzenetriamine, N1,N1,N3,N3,N5,N5-hexaphenyl- (CA INDEX
 NAME)



CC 22-10 (Physical Organic Chemistry)
 IT 140848-82-4P
 RL: PRP (Properties); FORM (Formation, nonpreparative); PREP
 (Preparation)
 (formation and ESR of)
 IT 126717-23-5P
 RL: SPN (Synthetic preparation); PREP (Preparation)
 (preparation, x-ray anal., and cyclic voltammetry of)
 L28 ANSWER 51 OF 55 HCAPLUS COPYRIGHT 2008 ACS on STN
 ACCESSION NUMBER: 1992:417249 HCAPLUS Full-text
 DOCUMENT NUMBER: 117:17249
 ORIGINAL REFERENCE NO.: 117:3019a,3022a
 TITLE: Phenylenediamine derivative charge-transporting
 agent for electrophotographic photoreceptor
 INVENTOR(S): Miyamoto, Eiichi; Muto, Nariaki; Maeda, Tatsuo;
 Sumida, Keisuke; Kimura, Tadao
 PATENT ASSIGNEE(S): Mita Industrial Co., Ltd., Japan
 SOURCE: Eur. Pat. Appl., 60 pp.
 CODEN: EPXXDW
 DOCUMENT TYPE: Patent
 LANGUAGE: English
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 455247	A2	19911106	EP 1991-107132	199105 02
			<--	
EP 455247	A3	19920513		
EP 455247	B1	19950913		
R: DE, FR, GB, IT				
JP 04013775	A	19920117	JP 1990-116132	199005

					02
			<--		
JP 08009577	B	19960131			
JP 04013776	A	19920117	JP 1990-116133		199005
					02
			<--		
JP 08009578	B	19960131			
JP 04013777	A	19920117	JP 1990-116134		199005
					02
			<--		
JP 08009579	B	19960131			
JP 04013778	A	19920117	JP 1990-116135		199005
					02
			<--		
JP 07059673	B	19950628			
PRIORITY APPLN. INFO.:			JP 1990-116132	A	199005
					02
			<--		
			JP 1990-116133	A	199005
					02
			<--		
			JP 1990-116134	A	199005
					02
			<--		
			JP 1990-116135	A	199005
					02
			<--		
OTHER SOURCE(S):		MARPAT 117:17249			
GI					

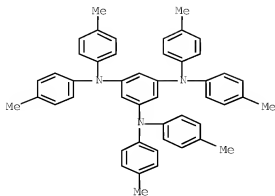
* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

AB A m-phenylenediamine derivative having the general formula I, II, or III [R1-4 = alkyl, alkoxy, halogen, or (N-substituted) amino; R5, R6, R8 = alkyl, alkoxy, halogen, (N-substituted) amino, alkenyl, or aryl; R1 = alkyl, alkoxy, halogen, (N-substituted) amino, alkenyl, aryl, or an electron-attracting group selected from nitro, sulfo, cyano, COR9 (R9 = H, alkyl, or amino), carboxyl, or esterified carboxyl; l, m, o, p = an integer of 0-5; q, r = 0 or but q + r ≥ 1; S = an integer of 0-4] is used as a charge-transporting agent in an electrophotog. photoreceptor.

IT 134257-64-QP
 RL: SPN (Synthetic preparation); PREP (Preparation)
 (preparation and use of, as charge-transporting agent for electrophotog. photoreceptors)

RN 134257-64-0 HCAPLUS

CN 1,3,5-Benzenetriamine, N1,N1,N3,N3,N5,N5-hexakis(4-methylphenyl)-
 (CA INDEX NAME)



IC ICM C07C211-54
ICS C07C217-92; G03G005-06

CC 74-3 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

IT 124591-09-9P **134257-64-0P** 142017-16-1P 142017-17-2P
142017-18-3P 142017-19-4P 142017-20-7P 142017-21-8P
142017-22-9P 142017-23-0P 142017-24-1P 142017-25-2P
142017-26-3P 142017-27-4P 142017-28-5P 142017-29-6P
142017-30-9P 142017-31-0P 142017-32-1P 142017-33-2P
142017-34-3P 142017-35-4P 142017-36-5P 142017-37-6P

RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation and use of, as charge-transporting agent for electrophotog. photoreceptors)

L28 ANSWER 52 OF 55 HCAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 1992:193607 HCAPLUS [Full-text](#)

DOCUMENT NUMBER: 116:193607

ORIGINAL REFERENCE NO.: 116:32789a,32792a

TITLE: Electron spin resonance of the quartet state of 1,3,5-tris(diphenylamino)benzene

AUTHOR(S): Yoshizawa, Kazunari; Chano, Akihisa; Ito, Akihiro; Tanaka, Kazuyoshi; Yamabe, Tokio; Fujita, Hideo; Yamauchi, Jun

CORPORATE SOURCE: Fac. Eng., Kyoto Univ., Kyoto, 606, Japan

SOURCE: Chemistry Letters (1992), (3), 369-72

CODEN: CMLTAG; ISSN: 0366-7022

DOCUMENT TYPE: Journal

LANGUAGE: English

AB The ESR of the quartet state of 1,3,5-tris(diphenylamino)benzene (TDAB) triocation is reported. The orange-colored cation radical is prepared by oxidation of TDAB with trifluoroacetic anhydride in a tetrabutylammonium tetrafluoroborate-CH₂Cl₂ solution. The ESR spectrum reveals that the cation radical shows a typical quartet signal and that it is extremely stable at room temperature

IT 140848-83-5P

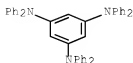
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(preparation and ESR of)

RN 140848-83-5 HCAPLUS

CN 1,3,5-Benzenetriamine, N,N,N',N',N'',N'''-hexaphenyl-, radical ion(3+), tris[tetrafluoroborate(1-)] (9CI) (CA INDEX NAME)

CM 1

CRN 140848-82-4
 CMF C42 H33 N3
 CCI RIS

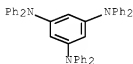


CM 2

CRN 14874-70-5
 CMF B F4
 CCI CCS



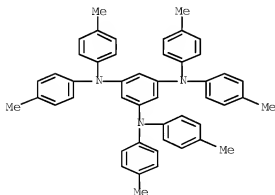
IT 126717-23-5P
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation);
 RACT (Reactant or reagent)
 (preparation and oxidation of, with trifluoroacetic anhydride in
 tetrabutylammonium tetrafluoroborate-methylene chloride)
 RN 126717-23-5 HCAPLUS
 CN 1,3,5-Benzenetriamine, N1,N1,N3,N3,N5,N5-hexaphenyl- (CA INDEX
 NAME)



CC 22-10 (Physical Organic Chemistry)
 Section cross-reference(s): 77
 IT 140848-83-5P
 RL: PRP (Properties); SPN (Synthetic preparation); PREP
 (Preparation)
 (preparation and ESR of)
 IT 126717-23-5P
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation);
 RACT (Reactant or reagent)
 (preparation and oxidation of, with trifluoroacetic anhydride in
 tetrabutylammonium tetrafluoroborate-methylene chloride)

L28 ANSWER 53 OF 55 HCAPLUS COPYRIGHT 2008 ACS on STN
 ACCESSION NUMBER: 1991:256810 HCAPLUS [Full-text](#)

DOCUMENT NUMBER: 114:256810
ORIGINAL REFERENCE NO.: 114:43179a,43182a
TITLE: Molecular design for better charge transporting organic materials. (II). Hole drift mobility and chemical structure of arylamine derivatives Tanaka, Hiroaki; Yamaguchi, Yasuhiro; Yokoyama, Masaaki
AUTHOR(S):
CORPORATE SOURCE: Fac. Eng., Osaka Univ., Suita, 565, Japan
SOURCE: Denshi Shashin Gakkaishi (1990), 29(4), 366-72
CODEN: DSHGDD; ISSN: 0387-916X
DOCUMENT TYPE: Journal
LANGUAGE: Japanese
AB Arylamine derivs. containing only N-Ph units, which can be taken as a structural min. unit for hole carrier, were synthesized, and their hole-drift mobilities in polymer dispersions were studied in relation to their chemical structure. The results validated the previously proposed concept for developing better charge-transporting carriers and the dependence of their mobility on the chemical structure was thus observed for the first time, is related to the position of the N-Ph substituent on benzene. The dependence was interpreted by the more concrete concept of polyfunctionality and intramol.-mobility based on MO calcs. Among the compds. investigated, a new arylamine derivative, N,N,N',N'-tetrakis (3-methylphenyl)-m-phenylenediamine (m-PDA), showed a high-hole mobility.
IT 134257-64-0
RL: USES (Uses)
(hole-drift mobility in, as charge-transport material for electrophotog.)
RN 134257-64-0 HCAPLUS
CN 1,3,5-Benzenetriamine, N1,N1,N3,N3,N5,N5-hexakis(4-methylphenyl)- (CA INDEX NAME)

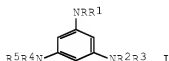


CC 74-3 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
IT 4316-54-5 80223-29-6 92899-33-7 124591-08-8 124591-09-9
134257-63-9 134257-64-0
RL: USES (Uses)
(hole-drift mobility in, as charge-transport material for electrophotog.)

L28 ANSWER 54 OF 55 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 1990:188985 HCAPLUS [Full-text](#)

DOCUMENT NUMBER: 112:188985
 ORIGINAL REFERENCE NO.: 112:31769a,31772a
 TITLE: Electrophotographic photoreceptors containing a triaminobenzene charge-transporting substance
 INVENTOR(S): Ogata, Michiko; Watanuki, Tsuneo; Kamisaka, Tomosumi; Tsukamoto, Koji; Saruwatari, Norio
 PATENT ASSIGNEE(S): Fujitsu Ltd., Japan
 SOURCE: Jpn. Kokai Tokkyo Koho, 7 pp.
 CODEN: JKXXAF
 DOCUMENT TYPE: Patent
 LANGUAGE: Japanese
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

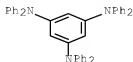
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
-----	---	-----	-----	
JP 01219838	A	19890901	JP 1988-46501	19880229
			<--	
PRIORITY APPLN. INFO.:			JP 1988-46501	19880229
			<--	
OTHER SOURCE(S):	MARPAT 112:188985			
GI				



AB Electrophotog. photoreceptors have a photoconductive layer containing a triaminobenzene derivative I [R, R1-5 = lower alkyl, lower alkoxy, (substituted) aryl, aralkyl] as a charge-transporting substance on an elec. conductive support. The photoreceptors exhibit high sensitivity, low residual potential, and good cyclicability. Thus, an Al-deposited polyester film was coated with a composition containing AlCl3 phthalocyanine and polyester resin and overcoated with a composition containing I (R = R1-5 = Ph) and polycarbonate resin to give a photoreceptor showing good sensitivity and cyclicability.

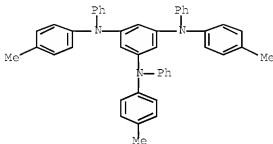
IT 126717-23-5 126717-25-7
 RL: USES (Uses)
 (charge-transporting agent, for electrophotog. photoconductor, for repeated use)

RN 126717-23-5 HCAPLUS
 CN 1,3,5-Benzenetriamine, N1,N1,N3,N3,N5,N5-hexaphenyl- (CA INDEX NAME)



RN 126717-25-7 HCAPLUS

CN 1,3,5-Benzenetriamine, N1,N3,N5-tris(4-methylphenyl)-N1,N3,N5-triphenyl- (CA INDEX NAME)



IC ICM G03G005-06

CC 74-3 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

IT 126717-23-5 126717-24-6 126717-25-7

126717-26-8 126738-30-5

RL: USES (Uses)

(charge-transferring agent, for electrophotog. photoconductor, for repeated use)

L28 ANSWER 55 OF 55 HCAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 1988:21113 HCAPLUS [Full-text](#)

DOCUMENT NUMBER: 108:21113

ORIGINAL REFERENCE NO.: 108:3571a,3574a

TITLE: Ab initio and semiempirical MO calculations of intermolecular effective exchange integrals between organic radicals. Designing of organic ferromagnet, ferrimagnet and ferromagnetic conductors

AUTHOR(S): Yanaguchi, Kizashi; Toyoda, Yasuyuki; Nakano, Masayoshi; Fueno, Takayuki

CORPORATE SOURCE: Fac. Eng. Sci., Osaka Univ., Toyonaka, 560, Japan

SOURCE: Synthetic Metals (1987), 19(1-3), 87-92

CODEN: SYMEDZ; ISSN: 0379-6779

DOCUMENT TYPE: Journal

LANGUAGE: English

AB The intermol. effective exchange integrals (IEEI) for sandwich dimers and trimers of organic radicals were calculated by the ab initio GMO method. The sign of the IEEI-values was variable, depending on the syn- and anti-conformations of these clusters. The stereochem. selection rules obtained are applicable to designing liquid crystals, Langmuir-Blodgett (LB) membranes and organic solids, which conceivably exhibit (I) ferromagnetism and (II) ferrimagnetism. Several organic magnetic materials are proposed in relation

to the preceding and present theor. results of the high spin mols. and polymers.

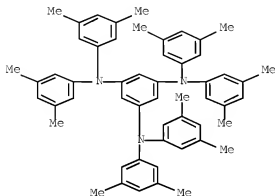
IT 111830-46-7

RL: PRP (Properties)

(spin d. and spin d. product for)

RN 111830-46-7 HCAPLUS

CN 1,3,5-Benzenetriamine, N,N,N',N',N'',N'''-hexakis(3,5-dimethylphenyl)-, radical ion(3+) (9CI) (CA INDEX NAME)



CC 22-2 (Physical Organic Chemistry)

IT 3129-17-7 19610-33-4 25483-71-0 25768-05-2 93504-31-5

111830-42-3 111830-44-5D, derivs. 111830-45-6

111830-46-7 111830-47-8 111839-18-0D, derivs.

111839-19-1

RL: PRP (Properties)

(spin d. and spin d. product for)

=>